

Another Musco Innovation

Control•Link®

**Flexible control and
solid management
of your facility,
saves operating cost
and improves service**

*Get fingertip control of
your facilities from:*


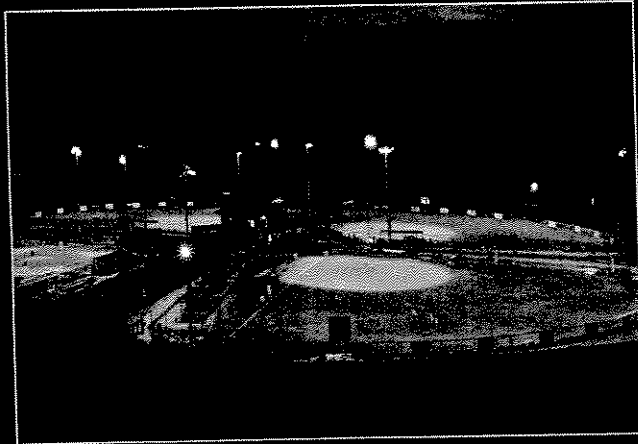
your desk

your field

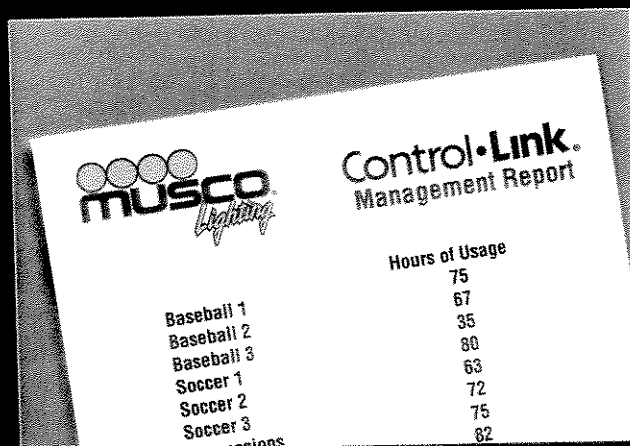
your home

your phone

... from anywhere



Control•Link® My Schedules	
City Park	On / Off
Baseball 1	7:30p/10:45p
Baseball 2	7:15p/2:00a
Baseball 3	6:45p/10:30p
Soccer 1	7:15p/2:00a
Soccer 2	7:30p/10:45p
Soccer 3	6:45p/10:30p
Concessions	4:30p/12:00a
Parking Lot	6:45p/2:30a



Control•Link® Management Report	
	Hours of Usage
Baseball 1	75
Baseball 2	67
Baseball 3	35
Soccer 1	80
Soccer 2	63
Soccer 3	72
Concessions	75
Parking Lot	82



We Make It Happen®

Introducing Musco's Control-Link® System

for new and existing sports facilities

With cities and recreational needs growing faster than ever, it's critical for schools, city planners, facility managers and park and recreation departments to maximize their available resources and make solid decisions about managing and expanding their facilities.

Control-Link® is a reliable, cost effective system that helps control, monitor and manage your new or existing recreational facility lighting and any other electrically or electronically operated equipment. The Control-Link System includes our exclusive Control-Link Central™ — which is staffed 24/7 to assist in your scheduling and reporting needs — the on-site Control-Link equipment, and an industry leading warranty.

Reduce energy cost and staff legwork

Control-Link reduces energy usage by operating lights and equipment only when needed. This helps curtail taxpayers' concerns about lights operating when fields are not in use.

The automated system reduces staff traveling from field to field to turn lights on and off before and after events. Eliminates the need to distribute and track multiple sets of keys, and reduces the time it takes to coordinate staff and facility schedules.

Flexible control simplifies operational needs

Lighting schedules are entered into an easy to use Control-Link Central website or by email, phone or fax. Users are set up with passwords that allow varying access levels that you specify. Passwords, unlike keys, can be issued or cancelled at any time making seasonal personnel or volunteer changes easier to manage.

The system is designed to allow long-term scheduling, with the flexibility to switch your lights on or off immediately. Emergency schedule changes can be made through Control-Link Central or an on-site Schedule Override screen, and on-site manual controls are provided for your maintenance staff.

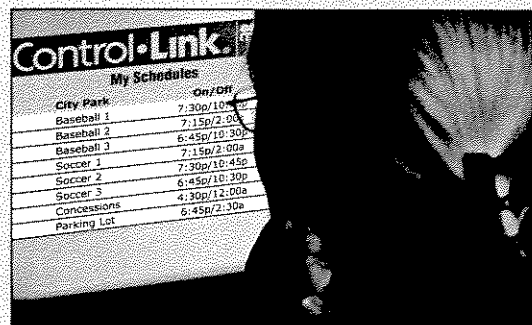
Solid management tools reduce hassle

Control-Link saves you time overseeing facility operations, scheduling staff and planning routine maintenance. Control-Link Central accumulates information for you about your facility usage including operating history by facility and user group, and provides proactive monitoring of your lighting system... reporting fixture outages to help you plan routine maintenance. A preseason light check helps assure your fields are ready for play.

Your Control-Link Central team can assist you in creating reports and analyzing your data to help provide tools for efficient operations, allocation of costs, assessment of user fees, proactive maintenance and facility expansion planning.

These capabilities provide the basis for significant long term cost savings and the potential for providing better customer service and innovative uses of your facilities without adding staff.

How to manage

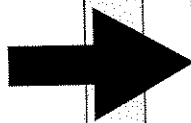
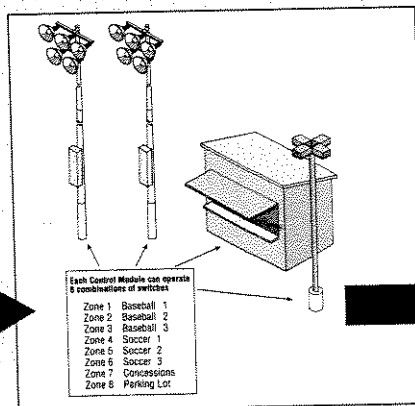
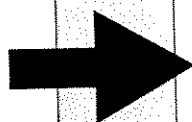
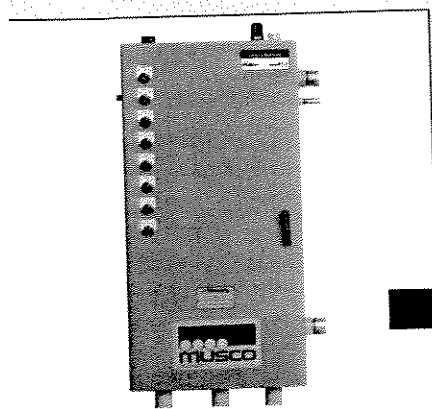


1 Enter schedules at your convenience

Enter schedules from any location via our easy-to-use Control-Link Central web site, or by email, phone, or fax.

- *Saves Energy and Staff Costs*
- *Allows Flexible Control*
- *Provides Usage Data*
- *Increases Security*
- *Provides Reliable Operation*

our lights without the late-night hours



2 Schedules are stored on-site, backed-up at Control-Link Central™

Schedules are transmitted from Control-Link Central via a digital cellular technology and stored in the on-site controller.

3 Equipment is controlled automatically

Lights and other equipment such as door locks, concession stands and security lights are operated per your schedules.

4 Control-Link Central™ provides support, monitoring and usage data

Control-Link Central supports you every step of the way. Trained staff provide scheduling support and verification, and monitor your lighting system for fixture outages. Control-Link Central's database stores field usage data by facility and user group.

"Thank you so much for providing such an effective and advanced system for scheduling our lights; it has truly revolutionized the way we work."

— Kelly Barker
Athletic Field Permit Coordinator
Dept of Parks, Recreation and Marine
City of Long Beach, CA

"It's the best thing we ever did. With the savings in energy and labor costs, our Control-Link system will pay for itself in less than 2 years."

— Art Avellino
Athletic Coordinator
City of Cape Coral, FL

"I use Control-Link Central™ to enter the weekly schedules so I can spend my time taking care of other things ... They do a great job, week after week."

— John Banks
Park and Recreation Supervisor
Laguna Niguel, CA

Control-Link Central™

Trained Staff Available 24/7

Operations Support

Control-Link Central™ provides two options for management and control of your facilities:

- Direct control of the Control-Link Central database and systems via an easy-to-use website;
- Contact Control-Link Central's team of trained operators 24/7 to monitor and enter your schedules and transmit last minute schedule changes.

Management Data

Control-Link Central offers effective tools to operate, manage, and analyze the extensive stored information. Standard reports include usage reports by facility and/or end-user.

System and Schedule Monitoring

The Control-Link Control and Monitoring System checks your system performance each time your lights are turned on. If the system detects fixture outages that affect playability, Control-Link Central is notified and will contact you. Preseason checks can be a part of your proactive maintenance program to help make sure your lights are operating before the first game.

Control-Link Central staff monitor all schedules entered to make sure they are successfully completed.

Control-Link Activation

Once the on-site equipment is installed, a Musco technician activates and tests your Control-Link system. The technician programs your specific field configurations and enters astronomic data for your geographic location. Sample commands are sent from Control-Link Central to test each relay/lighting zone.

Customer Training

Control-Link Central staff provides customer training via telephone conference on Control-Link operation, scheduling, website access, and all user functions.



"We greatly appreciate your super friendly service."

— Kelly Barker,
Athletic Field Permit Coordinator
Department of Parks, Recreation
and Marine, City of Long Beach, CA

Control-Link		Today is Thursday, April 12, 2001						
My Schedule		View Schedule for: All Facilities						
Weekly		View Schedule for: All Fields						
Weekly View for April 8 - April 14, 2001								
Facility Name/Field	Sun 8	Mon 9	Tue 10	Wed 11	Thu 12	Fri 13	Sat 14	
	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	
Butterfield Park								
Field #1			7:00p / 8:00p	7:00p / 8:00p	7:00p / 8:00p			
Field #2			6:45p / 10:30p	6:45p / 10:30p	6:45p / 10:30p			
Field #3			7:00p / 9:45p	7:00p / 8:00p	7:00p / 8:00p			
Field #4			6:45p / 8:00p	6:45p / 8:00p	6:45p / 8:00p			
Field #5			6:45p / 10:45p	6:45p / 10:45p	7:30p / 10:00p			
Field #6			6:45p / 8:00p	6:45p / 10:00p				
Field #7								
Security	7:12p / 2:00a	7:12p / 2:00a	7:13p / 12:30a	7:14p / 2:00a	7:15p / 2:00a	7:15p / 2:00a	7:16p / 2:00a	
Conv Center								
Ballfield 1		6:45p / 10:30p	6:45p / 10:30p	6:45p / 10:30p	6:45p / 10:30p	6:45p / 8:00p	6:45p / 8:30p	
Ballfield 2		6:45p / 10:30p	6:45p / 10:30p	6:45p / 10:30p	6:45p / 10:30p	6:45p / 8:00p	6:45p / 8:30p	
GFI/Spraker Outer	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	
Soccerboard 1	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	
Scoreboard 2	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	4:30p / 10:30p	

This is a partial sample of a customer's weekly schedule as entered on Musco's Control-Link website. The current day is always highlighted.

Control-Link Management Report	
Hours of Usage	75
Baseball 1	67
Baseball 2	35
Baseball 3	80
Soccer 1	63
Soccer 2	72
Soccer 3	75
Regions	82

Control-Link Central's database stores usage data by field and user group.

On-Site Equipment Overview

Your factory-built and -tested Control-Link equipment includes:

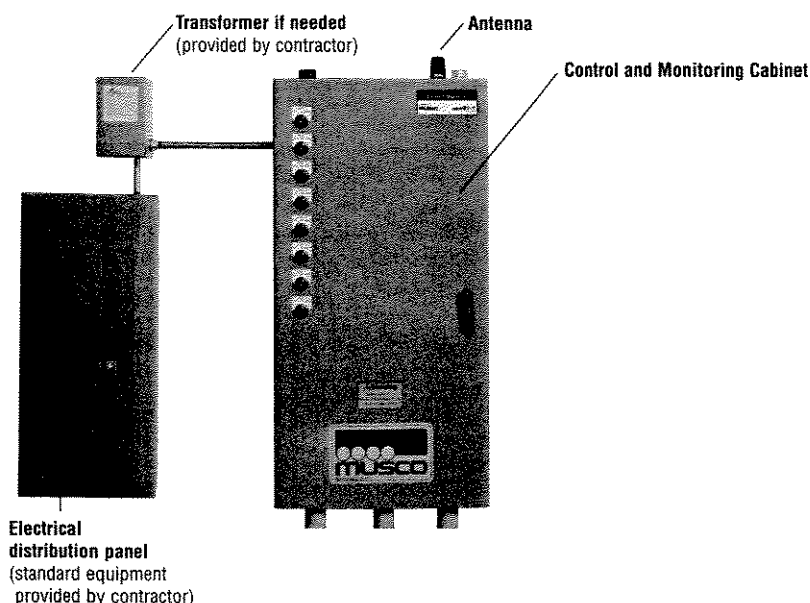
- Digital cellular communication equipment
- Control and Monitoring cabinet(s)

Optional Equipment

- Remote Manual Switches cabinet
- On-site Schedule Override
- Lightning Protection module

Supplied by Contractor

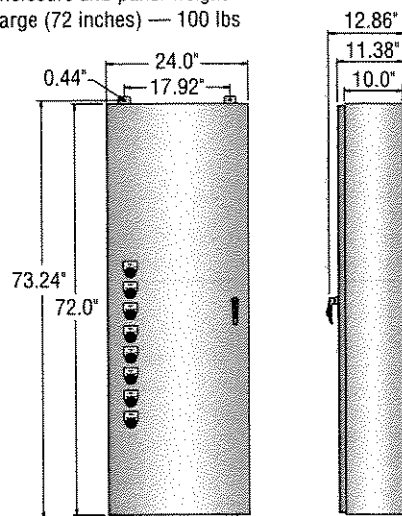
- Main disconnect (electrical distribution panel), conduit and power wiring
- 120 volt control circuit(s)
- Transformer if 120 volt supply not available
- Mounting hardware for cabinets
- Conduit



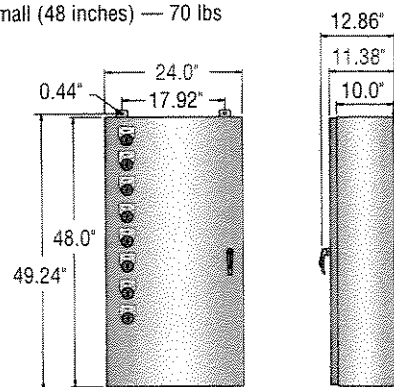
Control and Monitoring Cabinet

Enclosure

Enclosure and panel weight
Large (72 inches) — 100 lbs



Enclosure and panel weight
Small (48 inches) — 70 lbs



Technical Features

Assembled Cabinet

- Entire assembly UL 508 LISTED (Industrial Control Equip.) #E204954
- Meets FCC Part 15 Class B
- Factory wired, programmed and tested
- Controls up to 8 zones per cabinet
- Operating temperature -20°C to +60°C (-4°F to +140°F)
- Battery-backed internal time clock
- Database memory protected from power outages or fluctuations
- Enclosure and panel weight: 6 foot — 100 lbs, 4 foot — 70 lbs
- Optional lightning module

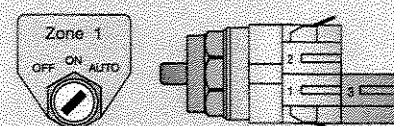
Enclosures

- NEMA Type 4, 5052 H32 aluminum
- Powder-coat painted after fabrication
- External mounting feet
- Lockable, 3-point latching assembly
- Door grounded enclosure

Manual Off-On-Auto Switches

- Keyed, maintain position
- Make-before-break contacts
- Factory wired to terminal blocks
- Mounted to maintain NEMA 4 rating
- Legend plate clearly identifies zone
- Switches may be placed in remote Manual Switches cabinet

Manual Off-On-Auto Switch detail



Control and Monitoring Cabinet

The on-site Control and Monitoring cabinet operates and monitors your lights and equipment on new lighting projects. Existing lighting systems require a retrofit Control Cabinet — contact Musco for details.

On/Off Control Module

Receives and stores schedules from Control-Link Central™, sends signals to contactors to operate your equipment, verifies schedules carried out.

Monitoring Module

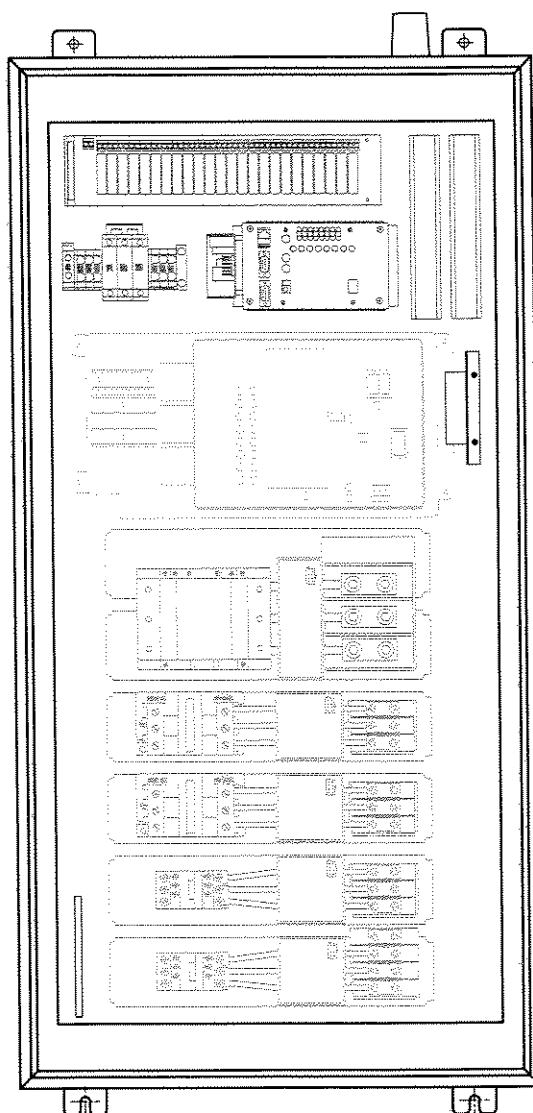
Monitors your lighting system and reports any fixture outages to help you plan routine maintenance and keep your facilities operating.

Contactor Switching Modules

Switches your equipment on/off per the schedules from the controller.

Communication Modem Module

Reliable, high-speed integrated communication system provides two-way communication.



Technical Features

Panel

- 5052 H32 aluminum
- Pre-punched, modular configuration
- Factory wired plug-in connections to additional cabinets
- Powder-coat painted after fabrication

Communication Modem

- Digital cellular technology
- No additional monthly charges

Contactors

- Rated at full capacity
- Sized at 30, 60, or 100 amps
- Electrically held
- 120 volt coil

Ground Bar

- 15 grounding terminals provided
- Holds size #14 to #4 gauge wires

Internal Control Wiring

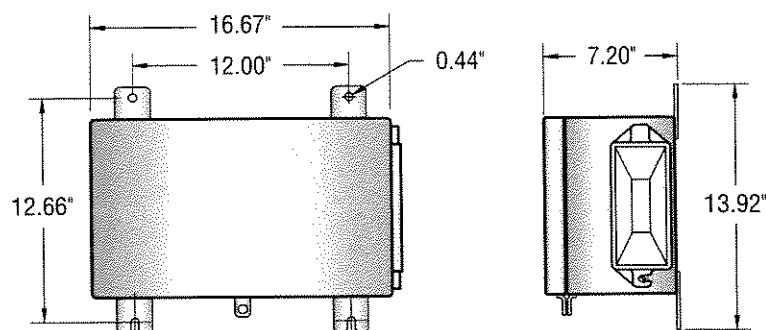
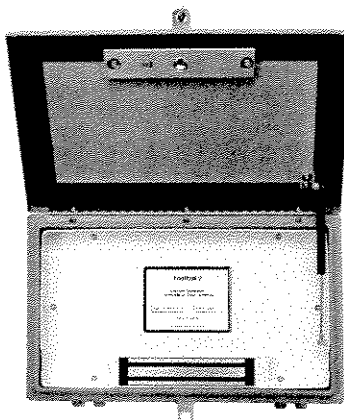
- Type MTW 105 degrees C
- Fuse holder 600 volt 16 amp IEC type
- Control terminal blocks mounted to DIN rail
- Plug-in wire harnesses for multiple cabinets (if required)

Contactor Module Options

Size	Weight	Rated Capacity	Coil Consumption (Contactor in closed position)	Wire Size Range	Maximum Per Small Cabinet	Maximum Per Large Cabinet
30 amp	2 lbs	100%	8.5 VA	2/0-14 ga	6	12
60 amp	4.5 lbs	100%	22 VA	2/0-14 ga	6	12
100 amp	10 lbs	100%	55 VA	350 mcm - 6 ga	3	6

Optional Schedule Override Cabinet

The on-site Schedule Override touch screen enables your user groups to extend play or turn the lights off early. Easy to use LCD screen and user access code protection.



Schedule Override Cabinet

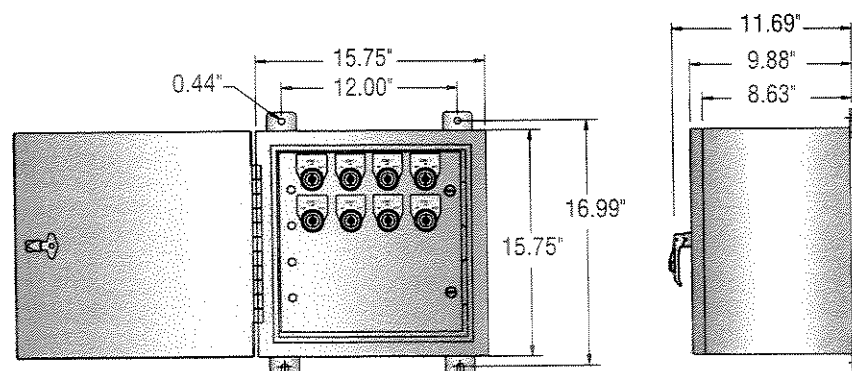
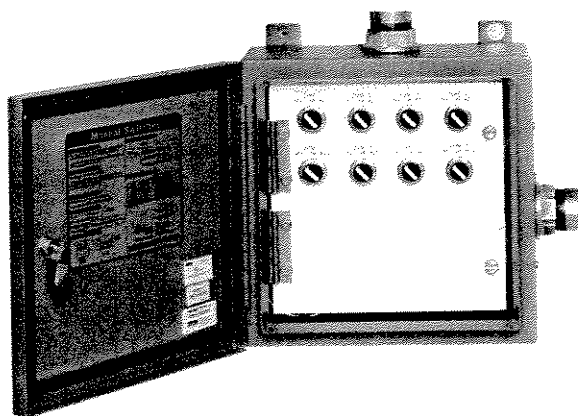
Technical Features

Schedule Override Cabinet

- NEMA Type 3R, 5052 H32 aluminum enclosure
- Powder-coat painted after fabrication
- External mounting feet
- Magnetic lock, disengages when schedule operating
- Operating temperature -20°C to $+60^{\circ}\text{C}$ (-4°F to $+140^{\circ}\text{F}$)
- Four digit user access code
- Locate up to 175 feet from Control & Monitoring cabinet

Optional Remote Manual Switches Cabinet

The remote Manual Switches cabinet is available for special switching requirements, or for more convenient Off-On-Auto switch location for maintenance staff. Lockable cabinet helps prevent tampering for outdoor mounted equipment.



Manual Switches cabinet

Technical Features

Remote Manual Switches Cabinet

- NEMA Type 4, 5052 H32 aluminum enclosure
- Operating temperature -20°C to $+60^{\circ}\text{C}$ (-4°F to $+140^{\circ}\text{F}$)
- Powder-coat painted after fabrication
- External mounting feet
- Lockable, latching assembly
- Door electrically bonded to enclosure
- Locate up to 300 feet from Control & Monitoring cabinet

Manual Off-On-Auto Switches

- Maintain position
- Make-before-break contacts
- Factory wired to terminal blocks
- Mounted to maintain NEMA 4 rating
- Legend plate clearly identifies zone

Musco Systems to Meet Your Sports-Lighting Needs

Introducing Light-Structure Green™

Outdoor: New Lighting Applications

Still engineered as 5 Easy Pieces™, Light-Structure Green™ offers unequalled performance for your budget, for the environment.

Reduces operating costs by 50%

Cuts wasted spill light by 50% or more

Eliminates 100% of your maintenance costs for 25 years

Additional Solutions

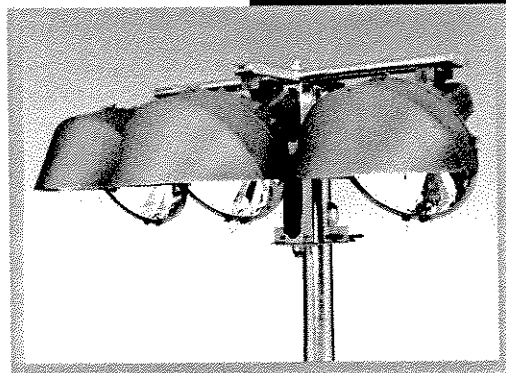
SportsCluster Green™

Outdoor & Indoor: Retrofit Applications

A modular photometric unit factory aimed and tested to perform from your choice of structures — makes retrofit of old equipment easy.

Reduces operating costs by 50%

Cuts wasted spill light by 50% or more

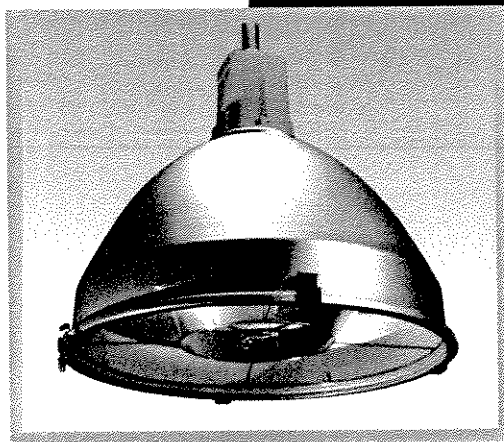


Light-Pak™

Indoor: New and Retrofit Applications

Energy-efficient indoor sports lighting that operates at your choice of two energy levels for improved cost control.

**Saves energy costs
over alternative systems**



We Make It Happen.

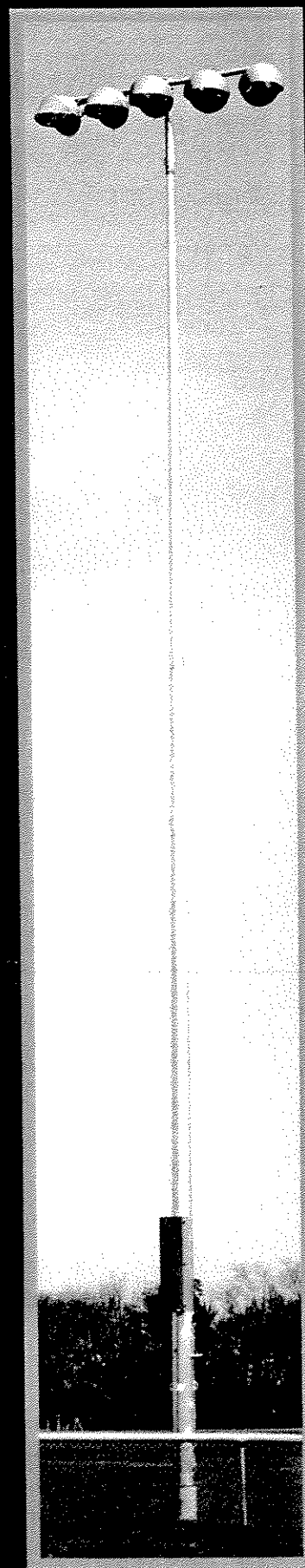
www.musco.com

e-mail: lighting@musco.com

100 1st Avenue West / PO Box 808
Oskaloosa, Iowa 52577
641/673-0411 • Fax: 641/672-1996

800/825-6030

Patents Pending
©1998, 2006 Musco Lighting
B-505-9





Electrical Distribution Plans

Elm Street Field
Softball Lighting Project
Acton, Massachusetts

Musco's Light Structure Green is the approved product.
Electrical Distribution Plans will require no change.



Performance Guarantee

Elm Street Field
Softball Lighting Project
Acton, Massachusetts

Musco hereby guarantees compliance with the following specifications for your project. Furthermore, Musco guarantees the constant light levels for 25 years +/-10% of the predicted mean in accordance with IESNA RP-6-01.

Field	Constant Average Illumination		Uniformity		Lamp Tilt Factor	Average kW Demand
	Infield	Outfield	Infield	Outfield		
Softball	50 fc	30 fc	2.0:1.0	2.5:1.0	1.0	43.792

Field	Constant Average Illumination	Uniformity	Lamp Tilt Factor	Average kW Demand
Area 2 Practice	25 fc	5.5:1.0	1.0	42.228
Area 3 Practice	10 fc	6.0:1.0	1.0	6.256

This guarantee is dependent upon the following:

- All test stations matched exactly to the number and location of points supplied with the Musco computer generated light scan for constant light levels.
- Pole placement must be within 3 feet of Musco recommendation.
- Voltage supply to the ballast of all fixtures must be no less than 97% of the designed secondary voltage.

We trust this meets with your approval.

Musco Sports Lighting, LLC

Luann Ferreira
Vice-President Sales



Musco Constant 25™

Musco's Comprehensive 25-Year Warranty & Maintenance Program

Elm Street Field – Acton, Massachusetts - #122070

For 25 years, Musco Lighting will provide all materials and labor to maintain operation of your lighting system to original design criteria. Our products and services are guaranteed to perform on your project as follows:

Light

Average constant light levels of 50 footcandles infield, 30 footcandles outfield for the Softball Field; 25 footcandles for the Football Practice area; 10 footcandles for the Practice Area #3 are guaranteed through Musco's Smart Lamp™ and service technology, within the Illumination Engineering Society of North America RP-6-01 standards of +/- 10% of the design criteria.

Musco will electronically monitor lamp operation and operating hours, and will group relamp at the end of the 5000 hour useful life.

Initial lamps provided:	5000 hours
Group lamp replacements: 1 x 5000 hours	<u>5000 hours</u>
Total hours of lamp warranty and maintenance:	10,000 hours

Individual lamp outages that occur during the lamp warranty and maintenance period stated above are repaired when the usage of any field is materially impacted. If actual usage exceeds 10,000 hours, the customer will be required to purchase lamp replacements in order to maintain the warranty to the end of twenty-five years.

Energy Consumption

Energy consumption for your lighting system will average 57.868 kW per hour, and will not exceed 62.9 kW per hour at the maximum. Exhibit A provides a 25-year energy cost model based upon the customer provided utility rate and anticipated hours of usage. Changes in rates or usage will proportionately change the costs.

Monitoring, Maintenance and Control Services

Musco shall monitor the performance of your lighting system, including on/off status, hours of usage and lamp outages. If fixture outages that affect playability are detected, Musco will contact you and proactively dispatch technicians.

On-off control of your lighting system is provided via an easy-to-use web site scheduling system, phone, fax or email. Our trained Control-Link Central™ staff is available toll-free 24/7. Regular usage reports will be sent to you and are always available on Control-Link Central's web site.

Spill Light Control

Spill light readings at identified locations are guaranteed to be controlled to the values provided in Musco's design documents for your project, shown in Exhibit B. Readings shall be within the Illumination Engineering Society of North America RP-6-01 standards of +/- 10% of the design criteria.

Structural Integrity

Your project has been designed to Building Code BOCA, Edition 1999, 90mph, Exposure C.

Musco has a team of people to ensure fulfillment of our product and services warranty (Exhibit C) and maintains specifically-funded financial reserves dedicated to support our fulfillment of this warranty.

To further assure compliance, Musco will provide the Owner with this signed contract guaranteeing the comprehensive service for the 25-year period.

- See additional information on back page of warranty -



Musco Constant 25™

Musco's Comprehensive 25-Year Warranty & Maintenance Program

Project Name: Elm Street Field

Fixture Quantity: 37

Date Issued: Date of Shipment

Project Number: 122070

Lamp Type: 1500 Watt Smart Lamp™

Expiration: Date of Shipment + 25 years

Service under this Contract is provided by Musco Sports Lighting, LLC ("Musco") or an authorized servicer approved by Musco. Services performed under this Contract shall consist of furnishing labor and parts necessary to restore the operation of the covered Product(s) to original design criteria provided such service is necessitated by failure of the covered Product(s) during normal usage. This Contract covers Product(s) consisting of Musco's Light Structure Green™ with Control-Link® and any additional Musco manufactured product provided.

"We", "us" and "our" mean Musco. "You" and "your" mean the purchaser of the covered Product(s). No one has the authority to change this Contract without the prior written approval of Musco. Musco shall not assume responsibility for their agents or assignees other than as described below. If there is a conflict between the terms of this Contract and information communicated either orally or in writing by one or more of our employees or agents, this Contract shall control.

Additional Provisions

1. Availability of Service: Control-Link Central™ operators shall be available 24/7 via web site, phone, fax or email. Maintenance service specialists shall be available 8 AM to 5 PM Central Time, and services shall be rendered during these same hours in your local time zone, Monday through Friday (with the exception of national holidays). Hours of operation are subject to change without notice to you. Musco will exercise all reasonable efforts to perform service under this Contract, but will not be responsible for delays or failure in performing such services caused by adverse weather conditions, acts of any government, failure of transportation, accidents, riots, war, labor actions or strikes or other causes beyond its control.

2. Determination of Repairs: Musco will utilize the field monitoring system and any information provided by the customer to determine when the usage of the field is materially impacted. From this information, Musco will determine needed repair and/or replacement of products and parts. Repair will be with product(s) of like kind and quality.

3. Your Requirements Under this Contract: You must meet all electrical requirements as specified by the manufacturer. In addition, you promise and assure: full cooperation with Musco, Musco's technicians and authorized servicers during telephone diagnosis and repair of the covered Product(s); reasonable accessibility of the covered Product(s); a non-threatening and safe environment for service.

You agree to check fuses and to replace fuses as needed. Musco provides spare fuses and a fuse puller in the lowest alpha-numeric numbered enclosure Musco will replenish spare fuses used.

4. Service Limitations - This Contract does not cover: Maintenance, repair or replacement necessitated by loss or damage resulting from any external causes such as, but not limited to, theft, environmental conditions, negligence, misuse, abuse, improper electrical/power supply, unauthorized repairs by third parties, attachments, damage to cabinetry, equipment modifications, vandalism, animal or insect infestation, physical damage to covered Products parts or components, or acts of God/nature (including, but not limited to: earthquake, flood, tornadoes, typhoons, hurricanes or lightning).

5. Contract Limitations:

a. **EXCLUSIONS FROM COVERAGE:** IN NO EVENT WILL MUSCO BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES WHICH INCLUDE, BUT ARE NOT LIMITED TO, ANY DELAY IN RENDERING SERVICE OR LOSS OF USE DURING THE REPAIR PERIOD OF THE PRODUCT(S) OR WHILE OTHERWISE AWAITING PARTS.

b. **LIMITATION OF LIABILITY:** To the extent permitted by applicable law, the liability of Musco, if any, for any allegedly defective covered Product(s) or components shall be limited to repair or replacement of the Product(s) or components at Musco's option. THIS CONTRACT IS YOUR SOLE EXPRESS WARRANTY WITH RESPECT TO THE COVERED PRODUCTS(S). ALL IMPLIED WARRANTIES WITH RESPECT TO THE PRODUCT(S) INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXPRESSLY EXCLUDED.

c. Musco requires reasonable access for a crane or man lift equipment to service the lighting system. Musco will not be responsible for damage from operating the vehicle on the property when the equipment is operated in the prescribed manner over the designated access route.

6. Transfer and Assignment: You shall not have the right to assign or otherwise transfer your rights and obligations under this Contract except with the prior written consent of Musco provided, however, that a successor in interest by merger, operation of law, assignment or purchase or otherwise of your entire business shall acquire all of your interests under this Contract.

7. Governing Law: Unless otherwise governed by applicable state law, the Contract shall be interpreted and enforced according to the laws of the State of Iowa.

8. Subrogation: In the event Musco repairs or replaces any covered Product(s), parts or components due to any defect for which the manufacturer or its agents or suppliers may be legally responsible, you agree to assign your rights of recovery to Musco. You will be reimbursed for any reasonable costs and expenses you may incur in connection with the assignment of your rights. You will be made whole before Musco retains any amounts it may recover.

Signature: _____

Vice President of Sales

25-Year Life Cycle Cost

Elm St Field Acton, MA

Prepared for: Mr. Jack Blais, Blais Electrical Corp
06/04/07

	Prior Technology	Light-Structure GREEN	Your Savings
Hours	3,750	3,750	
Average kW	100.4	57.9	
Energy	\$37,665	\$21,701	\$15,965
Group Relamp	\$9,687	\$0	\$9,687
Lamp Maintenance	\$3,750	\$0	\$3,750
Controls - Energy	\$9,416	\$0	\$9,416
Controls - Labor	\$0	\$0	\$0
25-Year Life Cycle Cost	\$60,519	\$21,701	\$38,818

Assumptions

Field Name	Annual Operating Hours	Energy Cost per kWh	Prior Technology		Light-Structure Green		Controls Energy Savings	Labor Rate per Hour	# On/Off Cycles per Year	Labor Hours per Cycle
			Fixtures	Avg kW	Fixtures	Avg kW				
Baseball field	150	\$0.10	62	100.4	37	57.9	25.0%	N/A	N/A	N/A

NOTE:

Life cycle costs are based upon the assumptions given by the customer above. Any variation in this data will change the life cycle cost proportionately. Group Relamp calculates using a per lamp replacement cost of \$125, including parts, equipment, and labor. Useful lamp life of Prior Technology is 3000 hours. Musco guarantees the average Light-Structure Green system kW and 5000 hours useful life of the lamp.



We Make It Happen



GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Spill @ 100'

Elm St Field
Acton, MA

Spill @ 100'

Grid Spacing = 30.0'

Values given at 6.0' above grade

Luminaire Type: Green Generation

Rated Lamp Life: 5000 hours

Avg Lumens/Lamp: 134,000

Horizontal Footcandles

HORIZONTAL FOOTCANDLES

No. of Target Points: Entire Grid

Average: 0.249

Minimum: 0.04

Maximum: 0.74

Average Lamp Life Factor: 1.000

Number of Luminaires: 31

Avg KW over 5000 hours: 48.48

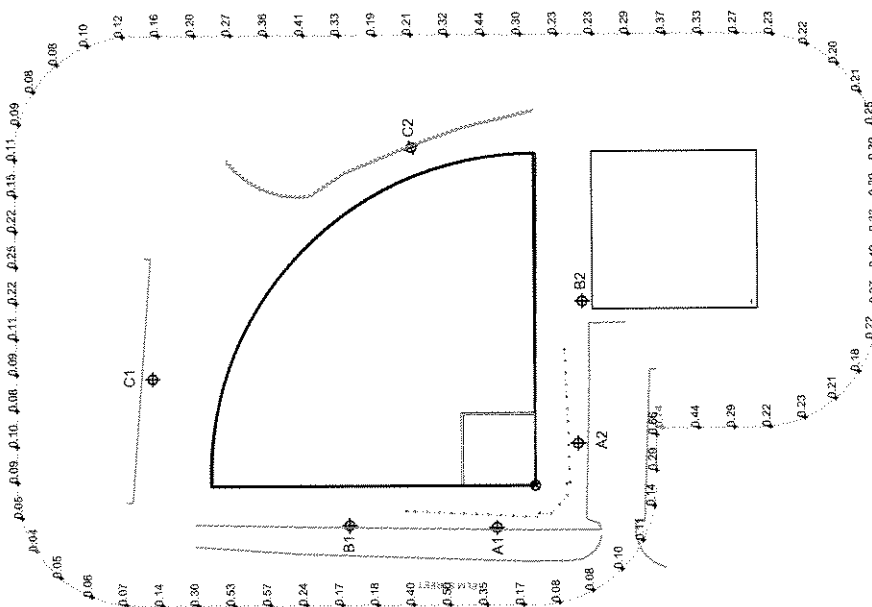
Max KW: 52.7

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be $\pm 10\%$ in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Ampage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume $\pm 1/2$ 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.



By: Micha Hudeck

File #: 120701a2

Date: 31-May-07

Pole location(s) & dimensions are relative to 0.0 reference point(s) ☒

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Print Date (31May2007) & Time (15:07)

SCALE IN FEET 1 : 100





GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Spill @ 100'

Elm St Field
Acton, MA

Spill @ 100'

Grid Spacing = 30.0'
Values given at 6.0' above grade

Luminaire Type: Green Generation
Rated Lamp Life: 5000 hours
Avg Lumens/Lamp: 134,000

MAX VERTICAL ILLUMINATION

No. of Target Probes: 72

Edits Grid

Average: 0.878

Maximum: 1.50

Minimum: 0.14

Average Lamp Tilt Factor: 1.000

Number of Luminaires: 31

Avg KW over 5000 hours: 48.48

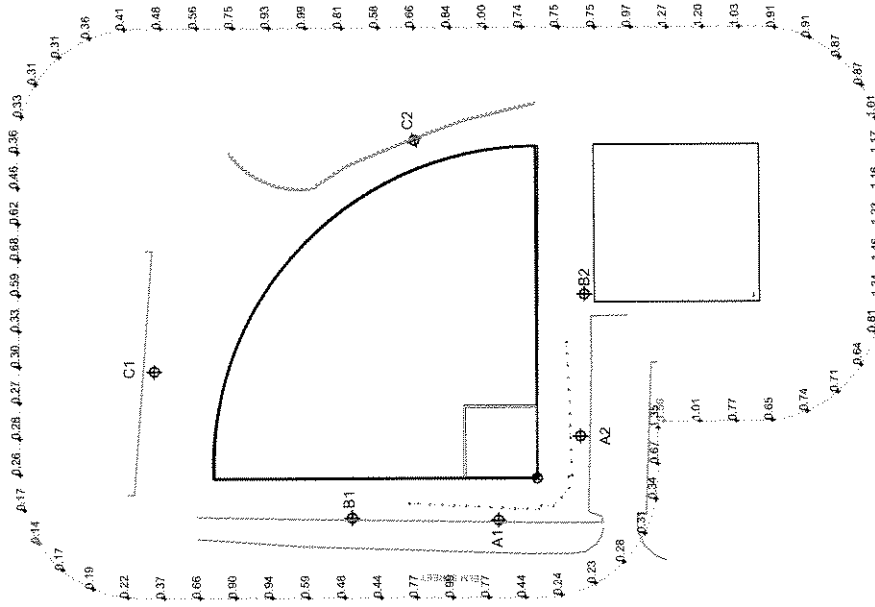
Max KW: 52.7

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/- 10% in accordance with IESNA RP-6-01 and CIBSE LC4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.



By: Michal Hudack

File #: 122070ar/2

Date: 31-May-07

Pole location(s) & dimensions are relative to 0.0 reference point(s) @

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Print Date (31May2007) & Time (15:07)





GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Property Line

- Elm St Field
- Acton, MA
- Property Line
- Grid Spacing = 30.0'
- Values given at 3.0' above grade
- Luminaire Type: Green Generation
- Rated Lamp Life: 5000 hours
- Avg Lumens/Lamp: 134,000

CONSTANT ILLUMINATION HORIZONTAL FOOTCANDLES

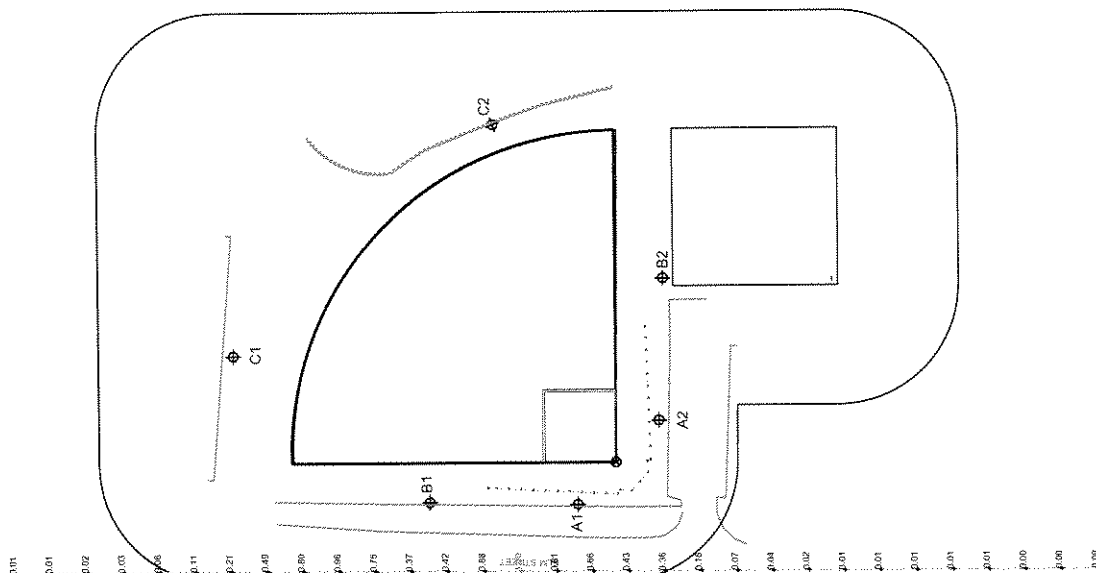
No. of Target Points:	31
Entire Grid	
Average:	0.282
Minimum:	0.00
Maximum:	1.000
Average Lamp Tilt Factor:	37
Number of Luminaires:	57.87
Avg KW over 5000 hours:	62.9
Max KW:	

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be $\pm 10\%$ in accordance with ESNR RP-4-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume $\pm 1/2$ 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.



SCALE IN FEET 1:100



By: Micha Hudack

File #: 122070ar2

Date: 31-May-07

Pole locations (A) dimensions are relative to 0.0 reference points (B)

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Print Date: 01-May-2007 8:15 AM (1507)

Exhibit B.3



GUARANTEED PERFORMANCE

ILLUMINATION SUMMARY

Property Line

Elm St. Field
Acton, MA

Property Line

Grid Spacing = 30.0'
Values given at 3.0' above grade
Luminaire Type: Green Generation
Rated Lamp Life: 5000 hours
Avg Lumens/Lamp: 134,000

CONSTANT ILLUMINATION

MAX VERTICAL FOOTCANDLES

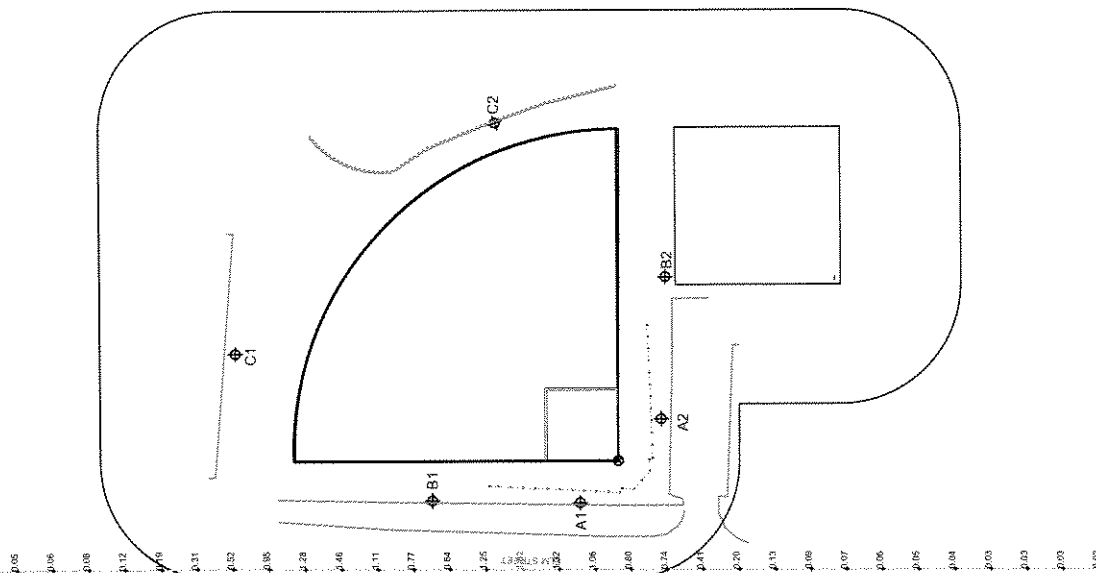
No. of Target Poles:	Entire Grid
Average:	0.486
Maximum:	1.52
Minimum:	0.02
Average Lamp Till Factor:	1.000
Number of Luminaires:	37
Avg KW over 5000 hours:	57.87
Max KW:	62.9

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the rated life of the lamp.

Field Measurements: Averages shall be +/- 10% in accordance with IESNA RP-6-01 and CIBSE LG4. Individual measurements may vary from computer predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.



By: Micha Hudack

File #: 122070air2

Date: 31-May-07

Pole location(s) & dimensions are relative to 0.0 reference point(s) @

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Print Date: (31May2007) & Time: (15:07)

SCALE IN FEET 1 : 100



Musco's Unequaled Controls & Lighting Services Team

Over 70 team members dedicated to operating and maintaining your sports lighting

Accessible . . . Knowledgeable . . . Accountable



Control-Link Central™ – (877) 347-3319

www.control-link.com, schedule@musco.com, FAX (800) 853-8847

- Staffed 24/7 with easy ways to contact us
- Trained operators provide scheduling and reporting assistance, one-on-one phone training and field operation monitoring
- Conducts proactive nightly tests to assure your control system is operating properly, even when the lights aren't in use
- Easy access to field usage data
- Preseason test of lights

We strive to provide a level of service where every customer reaches a live operator, rather than a voice mail system, when they call in. We can make your last minute schedule changes happen in just a few minutes.

— Roxie Morrison, Control-Link Central™ Manager



Lighting Services Team – (800) 825-6020

warranty@musco.com, FAX (888) 397-8736

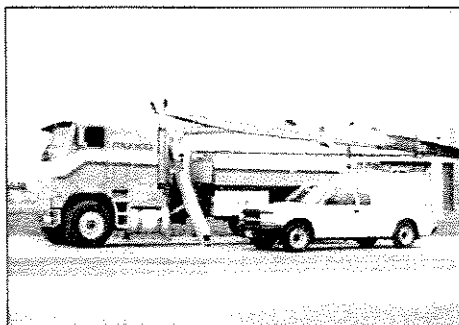
- Trained technicians specializing in sports lighting provide field maintenance and warranty work, consulting and temporary lighting
- Regionally based to effectively provide lighting services in every state; plus a network of over 1800 contractors
- Ongoing field "check-up" inspection program

Our technicians have an unequalled expertise in sports lighting. With our field monitoring, we'll contact you within one business day of detecting a fixture outage on your field . . . often before you even know about it.

— Jeff McNulty, Director of Lighting Services



Control-Link Central™ operators oversee on / off control of over 2000 fields per night and have experience with controlling nearly 5 million hours of lighting system operation nationwide.



Our lighting services team travels over 1 million miles, inspecting over 2300 fields and providing fine tuning and maintenance on another 1000 fields each year. They also supply temporary lighting for over 250 hours of live television broadcasts per year.



If you lined up every pole that our technicians go to the top of each year, it would be over 80 miles high . . . 253 times the height of the world's tallest building, the Taipei Financial Center.

Specific funds are set aside to provide solid financial resources to fulfill the maintenance and warranty needs for every Musco Lighting project.

Musco Service . . . We Make It Happen.



Project References*

Massachusetts Projects

Baseball

Alumni Field
Lowell, MA

Greenfield High School
Greenfield, MA

Lake Park
Worcester, MA

Worcester Professional Baseball*
Worcester, MA

Little League

Gloucester Little League
Gloucester, MA

Football

Assumption College Stadium*
Worcester, MA

Bentley College
Waltham, MA

Boston College
Chestnut Hill, MA

College of the Holy Cross Stadium*
Worcester, MA

Foxboro Stadium
NFL - New England Patriots
Foxboro, MA

Greenfield High School
Greenfield, MA

Northeastern University
Boston, MA

**University of Massachusetts
Intramural Fields***
Amherst, MA

Soccer

Assumption College Stadium*
Worcester, MA

Bentley College
Waltham, MA

College of the Holy Cross Stadium*
Worcester, MA

Greenfield High School
Greenfield, MA

**University of Massachusetts
Intramural Fields***
Amherst, MA

Softball

Alumni Field
Lowell, MA

Greenfield High School
Greenfield, MA

Worcester Professional*
Worcester, MA



Manufacturer's Model Number

Elm Street Field
Softball Lighting Project
Acton, Massachusetts

Product

# of Poles	Pole Designation	Catalog #
2	A1, A2	LSG - 70 -1500W - 3
1	B1	LSG - 80 -1500W - 6
1	B2	LSG - 80 -1500W - 6/4*
1	C1	LSG - 80 -1500W - 8
1	C2	LSG - 80 -1500W - 7

*This structure utilizes a back-to-back mounting configuration.

Controls and Monitoring

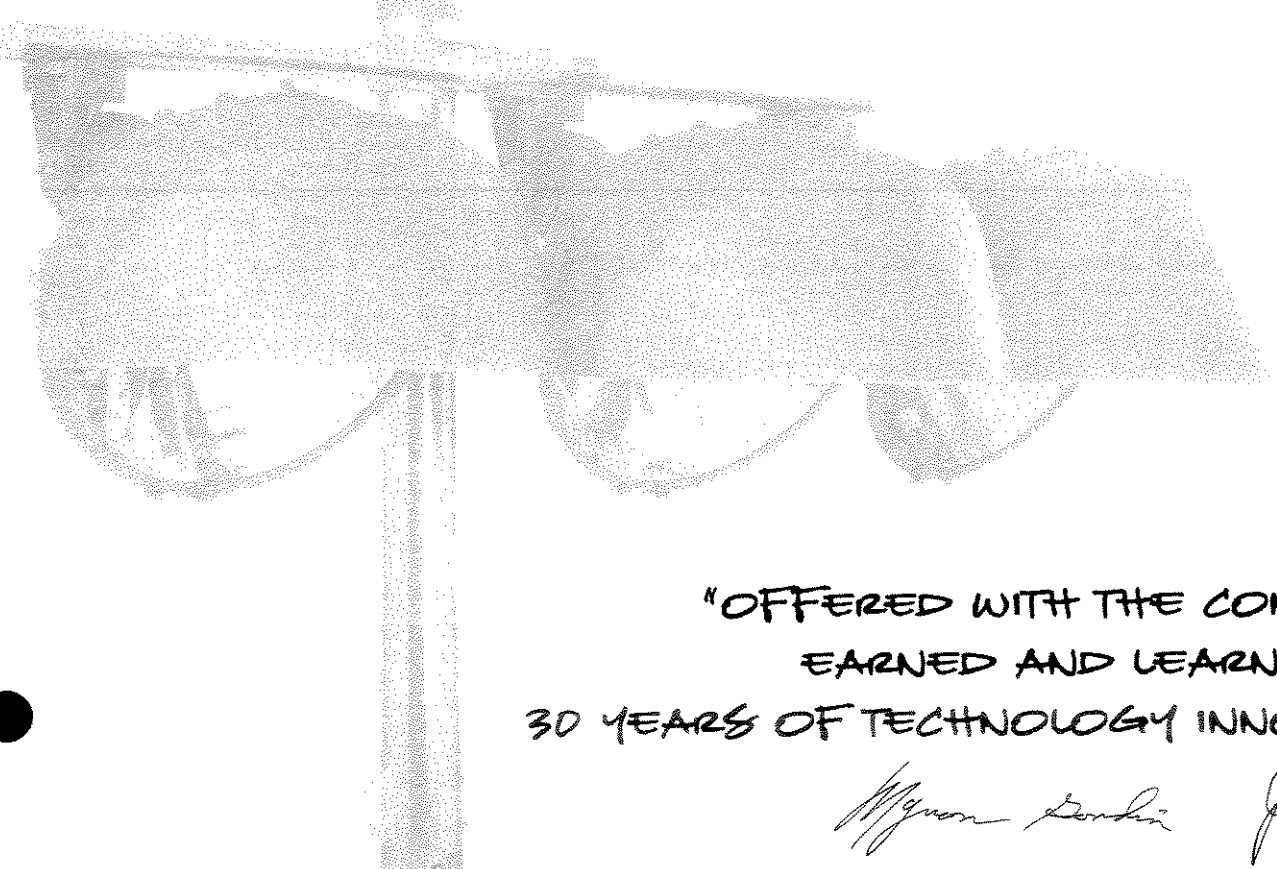
Catalog #
CM - 24 x 72 - 9



INTRODUCING...

Light•Structure GREEN™

***For your budget,
for the environment.***



"OFFERED WITH THE CONFIDENCE
EARNED AND LEARNED FROM
30 YEARS OF TECHNOLOGY INNOVATION."

Myron Gordon *John Rodden*



Musco's Light-Structure **GREEN**

Musco's Green friendly system will reduce by half or more, the cost of operating and maintaining your ballfield lighting system.

For Your Budget

Innovative photometric improvements of the luminaire result in substantially more efficient light control.

Musco's evolution of fundamental lamp principles creates a new operating system — Smart Lamp™.

Savings

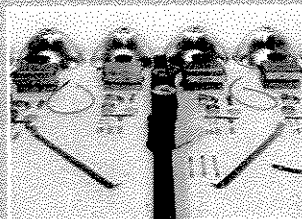
25 Year Life Cycle Cost Savings

Prior Technology Fixture Quantity	52
Light-Structure Green™ Fixture Quantity	32
1. Energy — photometric improvement	\$23,080
2. Group Relamp	\$16,250
3. Lamp Maintenance	\$3,750
4. Energy — controls	\$5,770
5. Labor — controls	\$10,000
Total Projected Savings	\$58,850
1. 300 hours per year, 9¢ per kilowatt hour	4. 25% savings by switching on and off 20 minutes closer to actual usage time.
2. \$125 per luminaire for relamp labor and materials.	5. 15 minutes labor for turning on and for off at \$8 labor rate — 2,500 operations.
3. Average of 7.5 repairs at \$500 each.	

Musco's journey to the Green Generation — 30 years of "good old fashioned" new technology

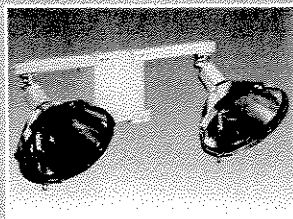
1976

Existing technology



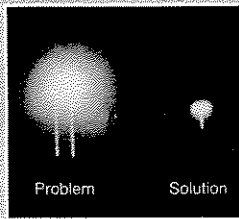
1977

Factory assembled and wired light cluster — SportsCluster®. Predictable results, easier installation.



1981

Glare control research



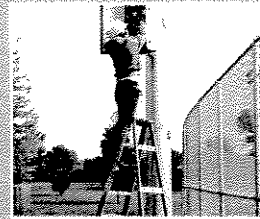
1982

Temporary lighting service and rolling lab — Mobile Lighting System



1987

Easier maintenance — remote ballasts



for a More Energy Conscious Generation.

Amazing new technology . . . big cost benefits.

And best of all, it does wonderful things for the adjoining environment. It puts much less light on nearby properties. It protects the beauty of the dark night skies.

For The Environment

Spill and glare control features are now a standard part of every luminaire at no extra cost.

This green generation luminaire system cuts spill by half or more, even when compared to Musco's prior industry-leading technology.

Less Spill		
360' x 225' Soccer Field		
30fc Average Maintained	30fc Constant Illumination	
Light-Structure with Total Light Control™ photometric option	Fixture Type	Light-Structure Green™
1500W MZ	Lamp Type	1500W MZ
Vertical Illumination		
0.50 fc	Average	0.15 fc
0.74 fc	Maximum	0.26 fc
52	# of Luminaires	32

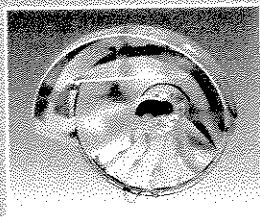
Now 25 years of unprecedented, trouble-free operation

Musco's *Constant 25™* warranty and maintenance program guarantees:

- Constant light levels and group lamp replacements at the end of rated lamp life
- Reduced energy consumption
- Monitoring, maintenance and remote on/off control services
- System structural integrity

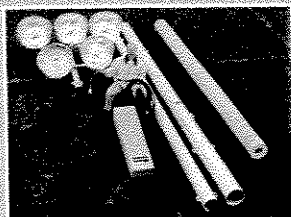
1989

Glare control with efficiency — SportsCluster 2s



1991

Complete lighting and electrical system from foundation-to-poletop, Light-Structure System™



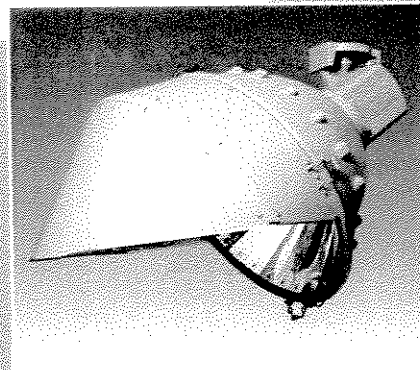
1997

Facility management services — 10 Club Service® and Control-Link®



2005

Energy, environment, today's prices — Light-Structure Green™



Light-Structure Green™ System — still Five Easy Pieces™ plus:

Improved Luminaire Efficiency

- 1. Reflector system:** More than 2000 photometric patterns provide optimal energy efficiency and minimal spill light for each project.
- 2. Visor System:** Several visor choices provide energy efficient light on the field and minimal spill light. The aerodynamics reduce wind load on the poles.
- 3. Side Shift Beam Control:** Beams can be adjusted within the luminaire horizontally as well as vertically. We can now custom fit the light to the corners.

Smart Lamp™ Operating System

- 1. Lamp:** 30 years of lamp experience has taught Musco how to operate the lamp with less energy and extend its life with a system of timed power adjustments.
- 2. Geared tilt adjustment:** With a geared leveling mechanism, the lamp arc tube operates in the energy advantageous horizontal position.

Increased Durability, Assured Results

- 1. Die-Cast aluminum reflector housing:** Provides a rugged foundation for building and maintaining a sophisticated photometric unit.
- 2. Gasketing:** Improved material and gasket system design virtually eliminate "outgassing" and other contamination of the reflectors and lens.
- 3. Factory Assembled Luminaires:** The luminaire ships totally assembled: avoids contaminants, saves time, improves aiming accuracy.
- 4. Attaching Mechanism:** The factory assembled luminaire connects electrically and structurally to the crossarm with one simple attachment.
- 5. Factory Aiming:** Musco's well established service of factory aiming is even better with Light-Structure Green™... field changes can still be done.

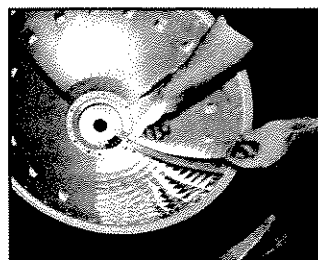
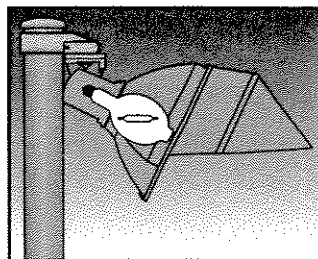
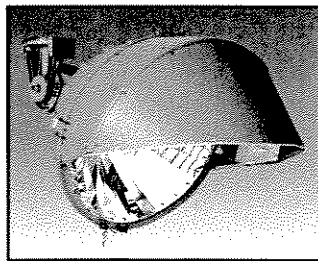
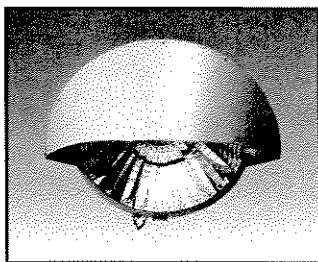
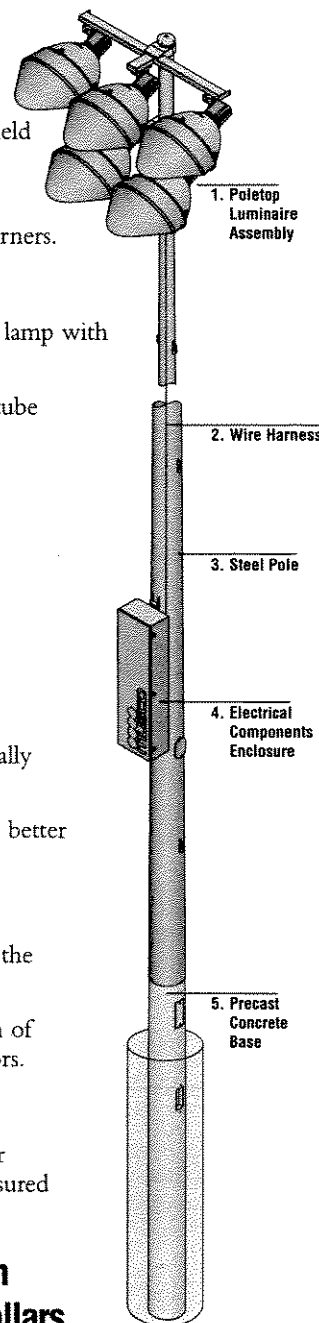
Solid control and flexible management

- 1. Controls and monitoring:** This system, in one simple cabinet, included in the base price, saves energy and gives you a solid, flexible management tool.
- 2. Control Link Central™:** Real people at Musco, 24/7, support the operation of your lights ... from office, field or home ... benefits field users and neighbors.

Ultimate guarantee

With **Green Generation Lighting**, Musco's Constant 25™ guarantees it all for 25 years, plus free relamping at the end of the lamps' rated life. All of this is assured by Musco's field service department and their technicians.

Light-Structure Green™ is the result of more than a dozen inventions and innovations from more than 10 million dollars of research and capital investment by Musco.



We Make It Happen®

800/825-6030

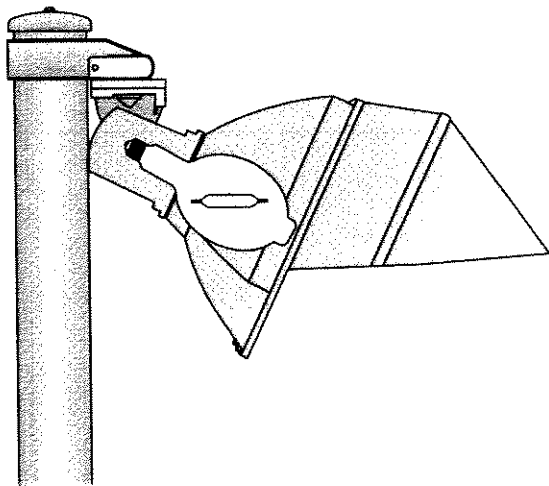
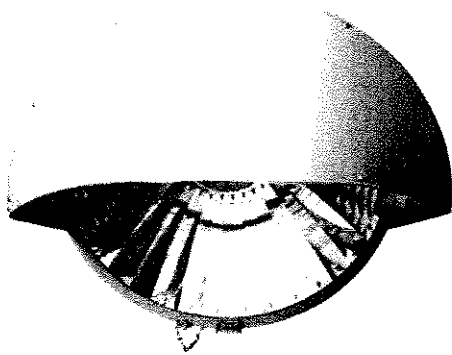
www.musco.com

e-mail: lighting@musco.com



Light-Structure GREEN™

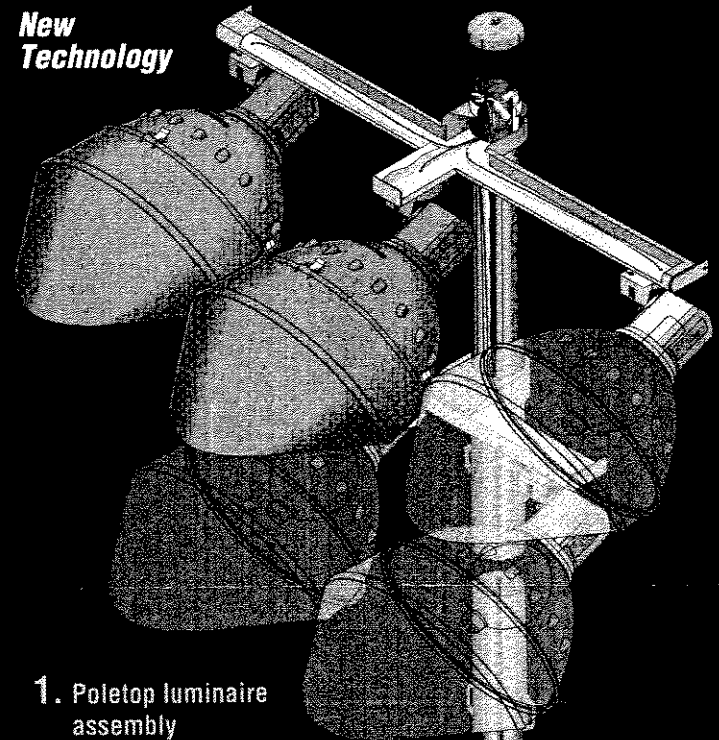
***For your budget,
for the environment.***



New Technology

- Cuts operating costs in half
- Reduces spill light by 50%
- Includes system monitoring and remote

New Technology

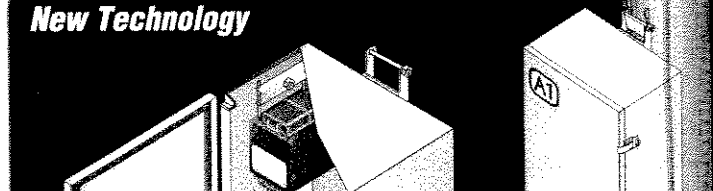


1. Poletop luminaire assembly

2. Wire Harness

3. Galvanized steel pole

New Technology



NOTICE OF AUTHORIZATION TO APPLY THE UL MARK

2005-01-04

Mr. Gary Bentrin
Musco Sports-Lighting Inc
2107 Stewart Rd Po Box 14
Muscatine IA 52761
United States

E-mail: lighting@musco.com

Reference: File E33316 Project 04NK28715 P.O. Number 4065-6050

Product(s): USL/CNL- Model SC2 Luminaire and Smart Lamp Fitting

Dear Mr. Bentrin,

UL's investigation of your product has been completed under the above project number and the subject product was determined to comply with the applicable requirements.

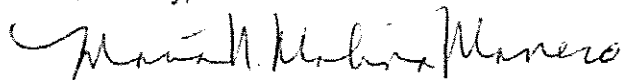
This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Listing Mark only at the factory under UL's Follow-Up Service Program to the subject product(s), which is (are) constructed as described below:

According to your letter dated 8/31/2004.

This authorization is effective from the date of this Notice and only for products at the indicated manufacturing locations. Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent to the indicated manufacturing locations in the near future. Please note that Follow-Up Services Procedures are sent to the manufacturers only unless the Applicant specifically requests this document.

Products that bear the UL Mark shall be identical to those that were evaluated by UL and found to comply with UL's requirements. If changes in construction are discovered, appropriate action will be taken for products not in conformance with UL's requirements and continued use of the UL Mark may be withdrawn.

Sincerely,



Maria N. Molina-Marrero
Senior Project Engineer
Department: 3018CNBK
Tel: 847-664-2482
Fax: 847-313-2482
E-mail: Maria.N.Molina-Marrero@us.ul.com

Reviewed by:



Walter G. Daus
Staff Engineer
Department: 3018CNBK
E-mail: walter.g.daus@us.ul.com





UL Listed Under:

Musco Lighting
2107 Stewart Road
P.O. Box 260
Muscatine, Iowa 52761



**Underwriters
Laboratories Inc.®**
LISTED

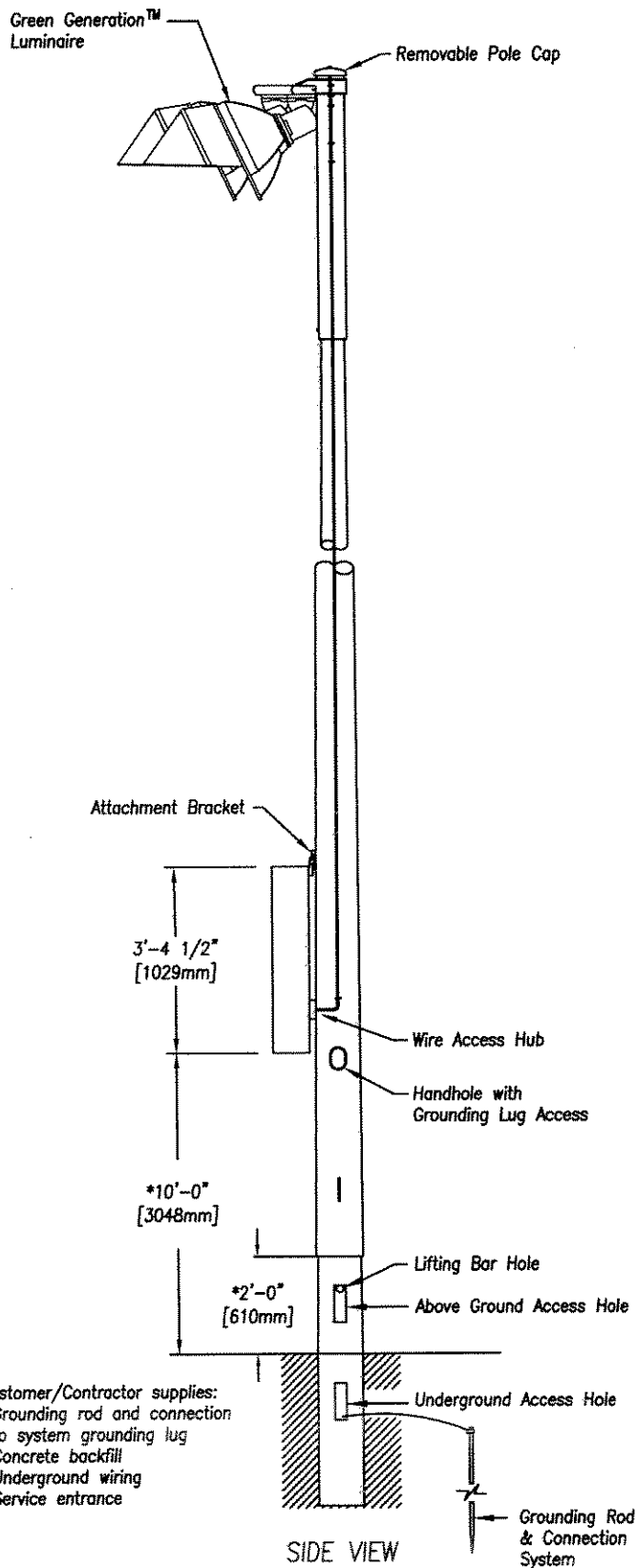
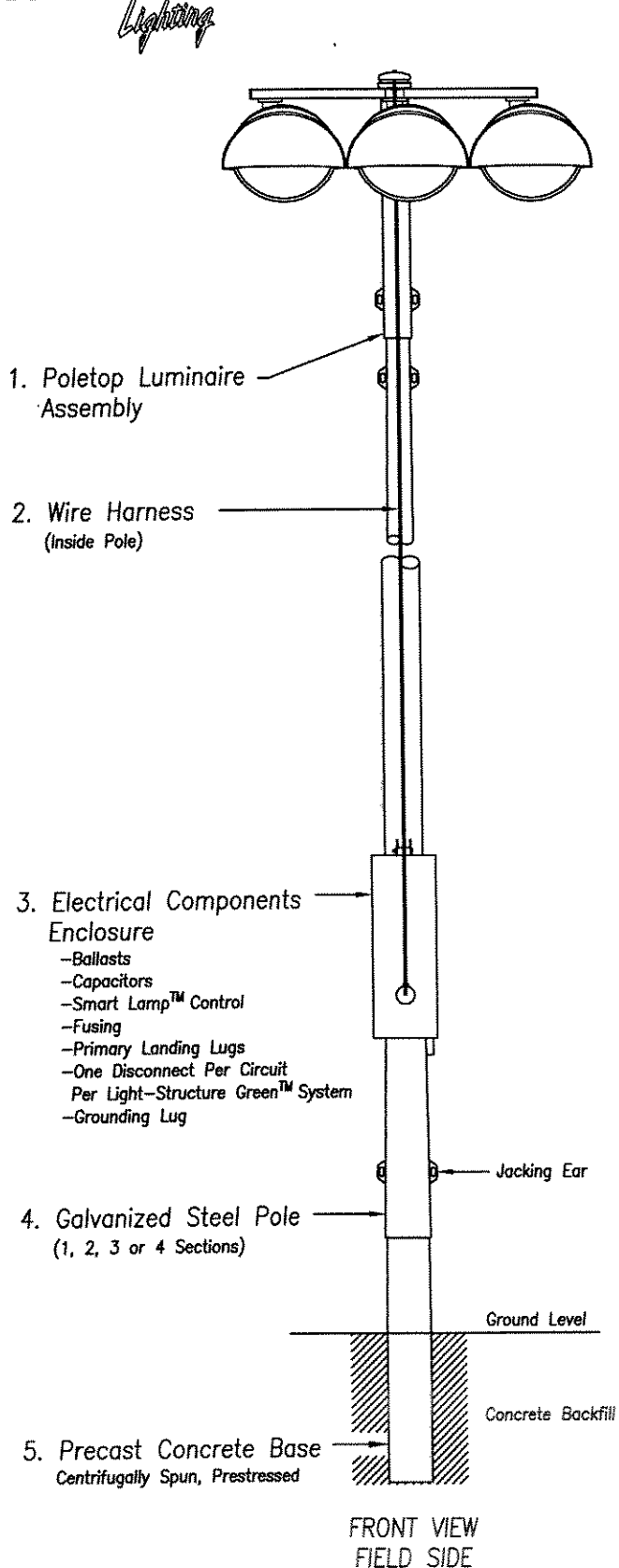
UL Category	Covers	UL Number
High Intensity Discharge Fixtures	SportsCluster® Units — Standard and Remote Ballast Musco Single Fixtures ShowLight™ Hood and Activator System	E33316
Devices - Scaffolding	Musco Platforms	SA7004
Industrial Control Equipment	Musco Multi-Watt™ Musco Control-Link™ Musco Lighting Contactor Cabinets	E123895 E204954
Fixture Fittings	Musco Light-Pak™ Ballast Box Musco Light-Pak™ Key Switch	E132445
Lighting Controls	Microlite Lighting Controls Microlite Relays	E139944 E181274

*Over a period of time we have had additional listings covering changes in the SportsCluster, such as ballast mounting. UL treats these as modifications of the original number instead of issuing additional numbers.

A copy of the UL Letter of Confirmation is available upon your request.



Typical Light-Structure Green™ System Detail – 3 Luminaires

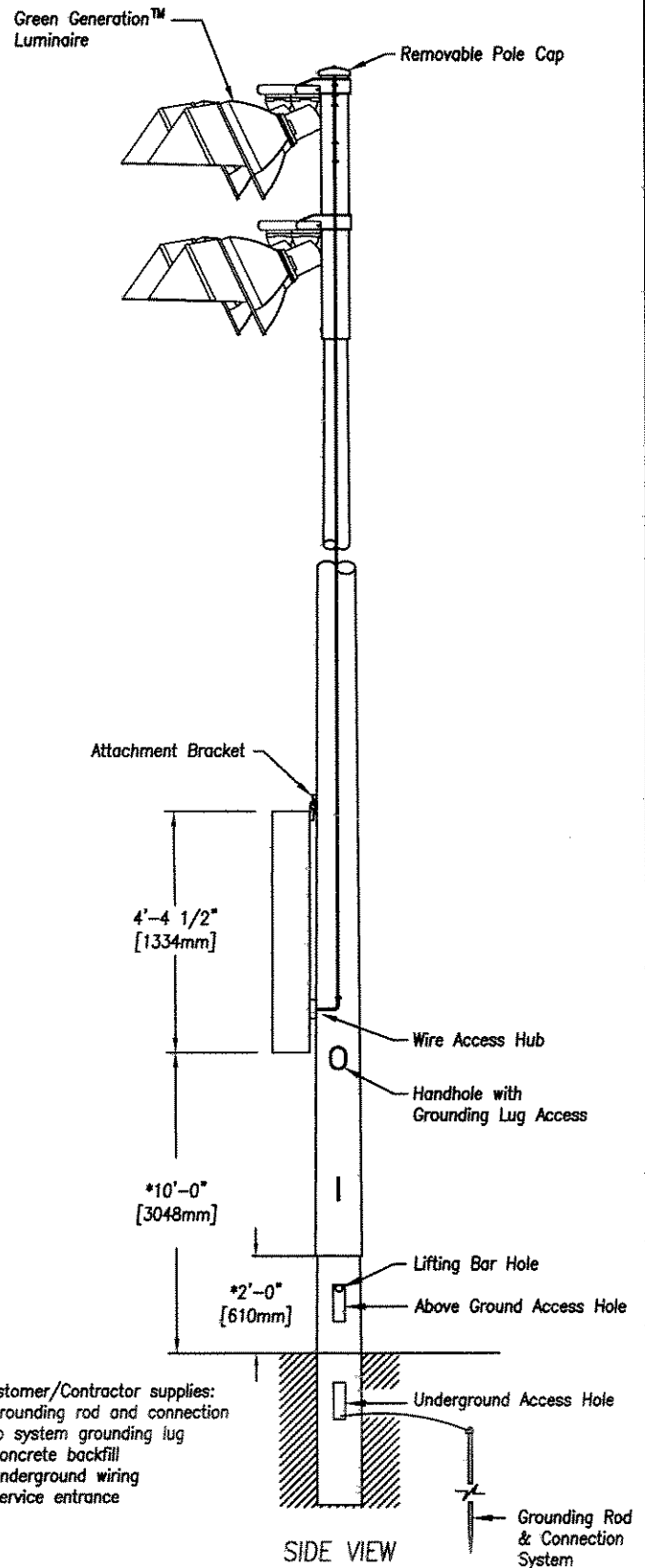
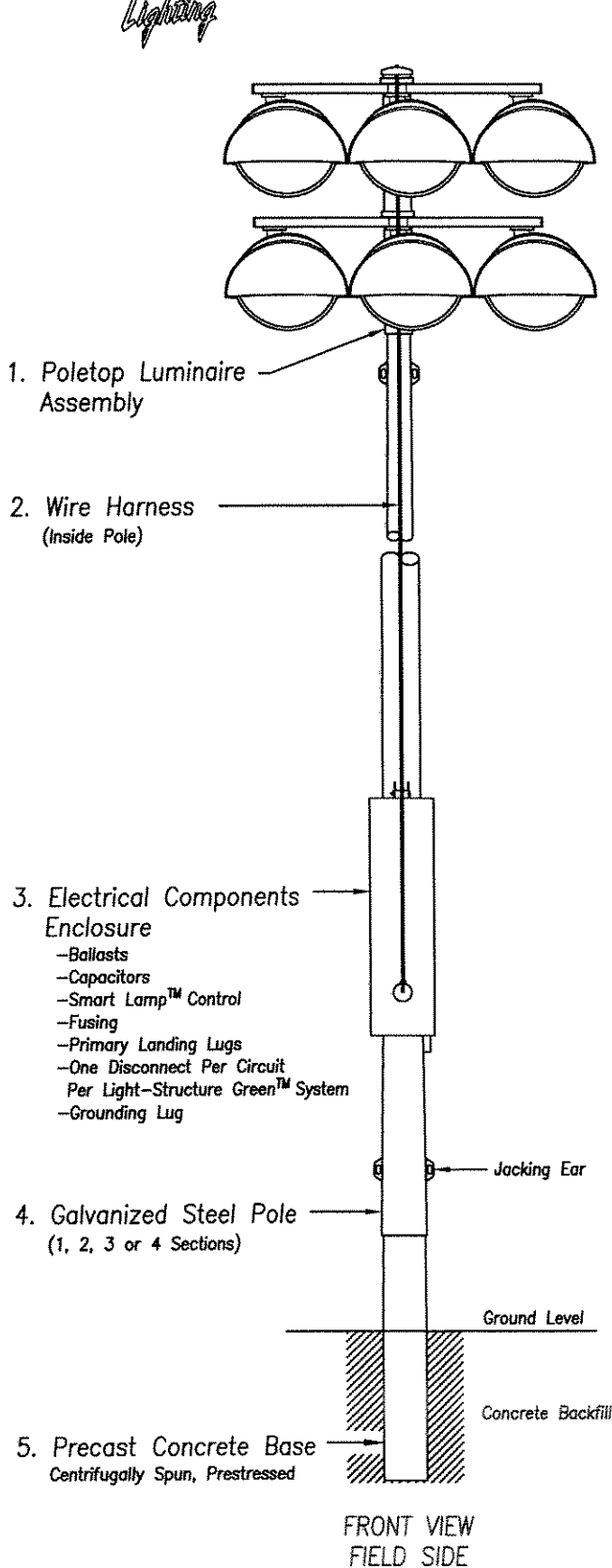


Notes:

1. This drawing is not to scale.
2. * This dimension for reference only. Variances may occur depending on steel pole tolerances, concrete tolerances, galvanizing thickness, hole depth accuracy.
3. Musco provides a base installation bar, an installation level modified for taper, and installation wedges.
4. Provisions for auxiliary equipment such as speaker or security lighting can be incorporated.
5. Copyright 1991, 2005 Musco Lighting. Patents issued and pending.



Typical Light-Structure Green™ System Detail – 6 Luminaires

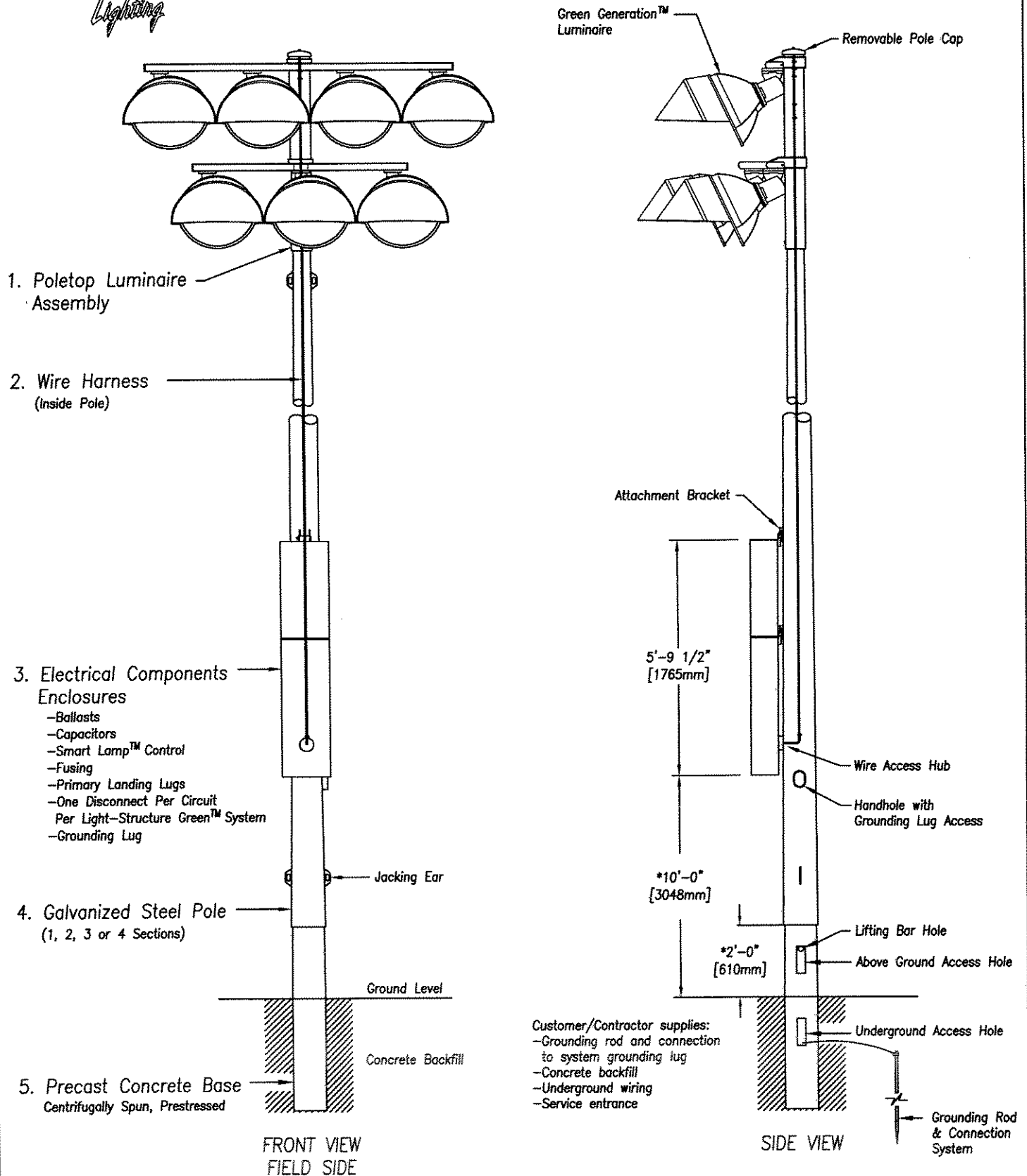


Notes:

1. This drawing is not to scale.
2. * This dimension is for reference only. Variances may occur depending on steel pole tolerances, concrete tolerances, galvanizing thickness, hole depth accuracy.
3. Musco provides a base installation bar, an installation level modified for taper, and installation wedges.
4. Provisions for auxiliary equipment such as speaker or security lighting can be incorporated.
5. Copyright 1991, 2005 Musco Lighting. Patents issued and pending.



Typical Light-Structure Green™ System Detail – 7 Luminaires

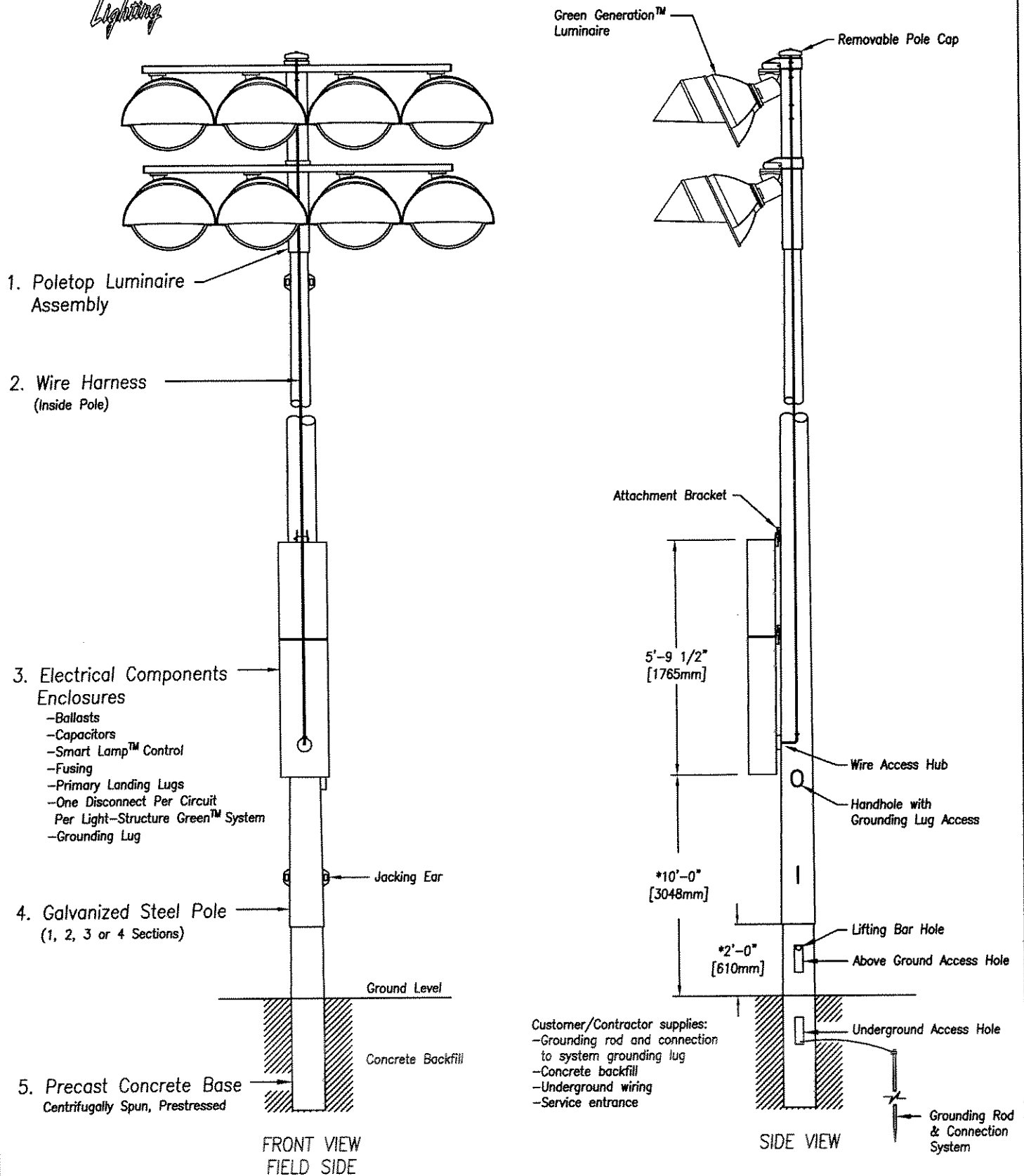


Notes:

1. This drawing is not to scale.
2. * This dimension for reference only. Variances may occur depending on steel pole tolerances, concrete tolerances, galvanizing thickness, hole depth accuracy.
3. Musco provides a base installation bar, an installation level modified for taper, and installation wedges.
4. Provisions for auxiliary equipment such as speaker or security lighting can be incorporated.
5. Copyright 1991, 2005 Musco Lighting. Patents issued and pending.

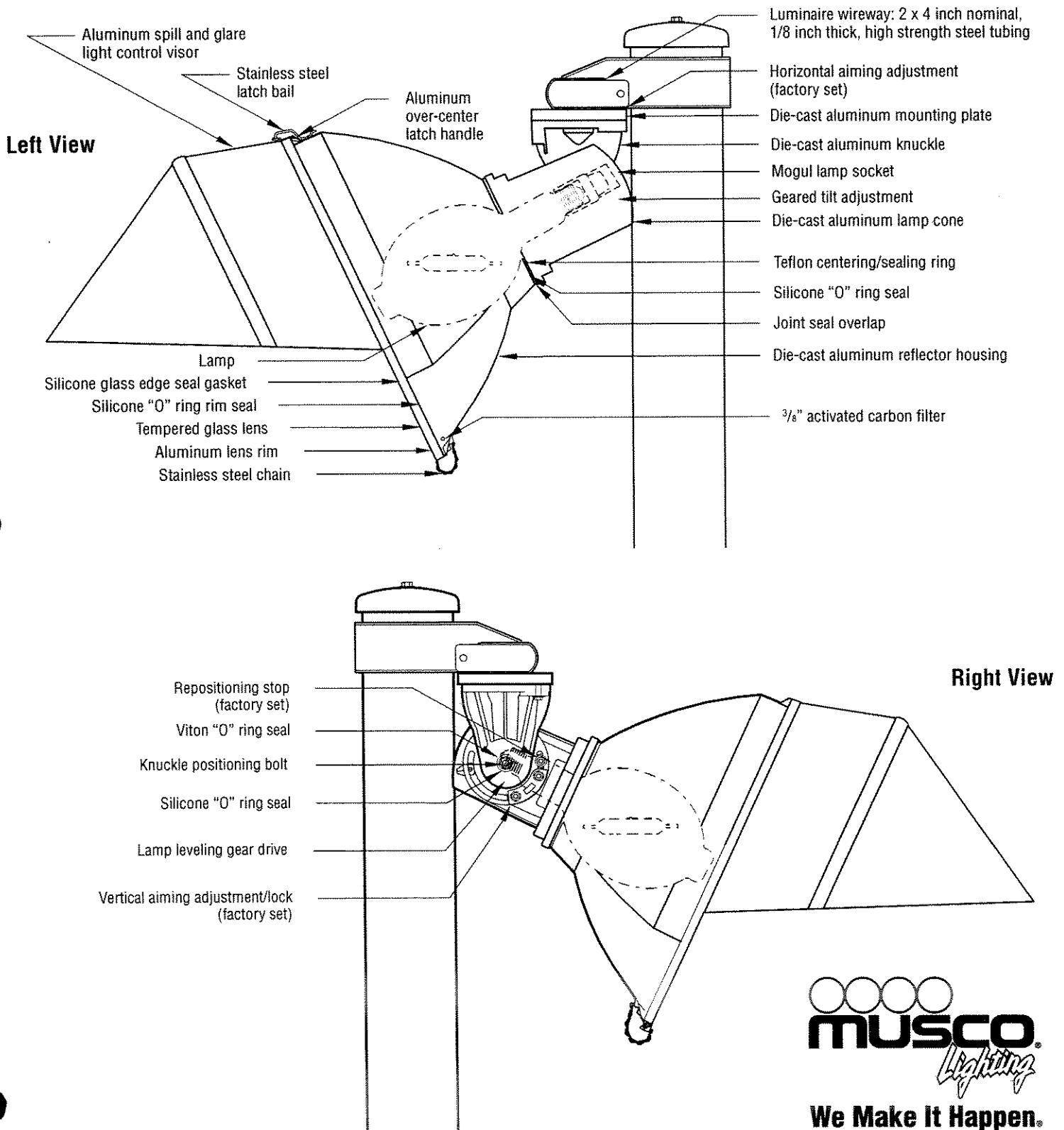


Typical Light-Structure Green™ System Detail – 8 Luminaires



Notes:

1. This drawing is not to scale.
2. * This dimension for reference only. Variances may occur depending on steel pole tolerances, concrete tolerances, galvanizing thickness, hole depth accuracy.
3. Musco provides a base installation bar, an installation level modified for taper, and installation wedges.
4. Provisions for auxiliary equipment such as speaker or security lighting can be incorporated.
5. Copyright 1991, 2005 Musco Lighting. Patents issued and pending.



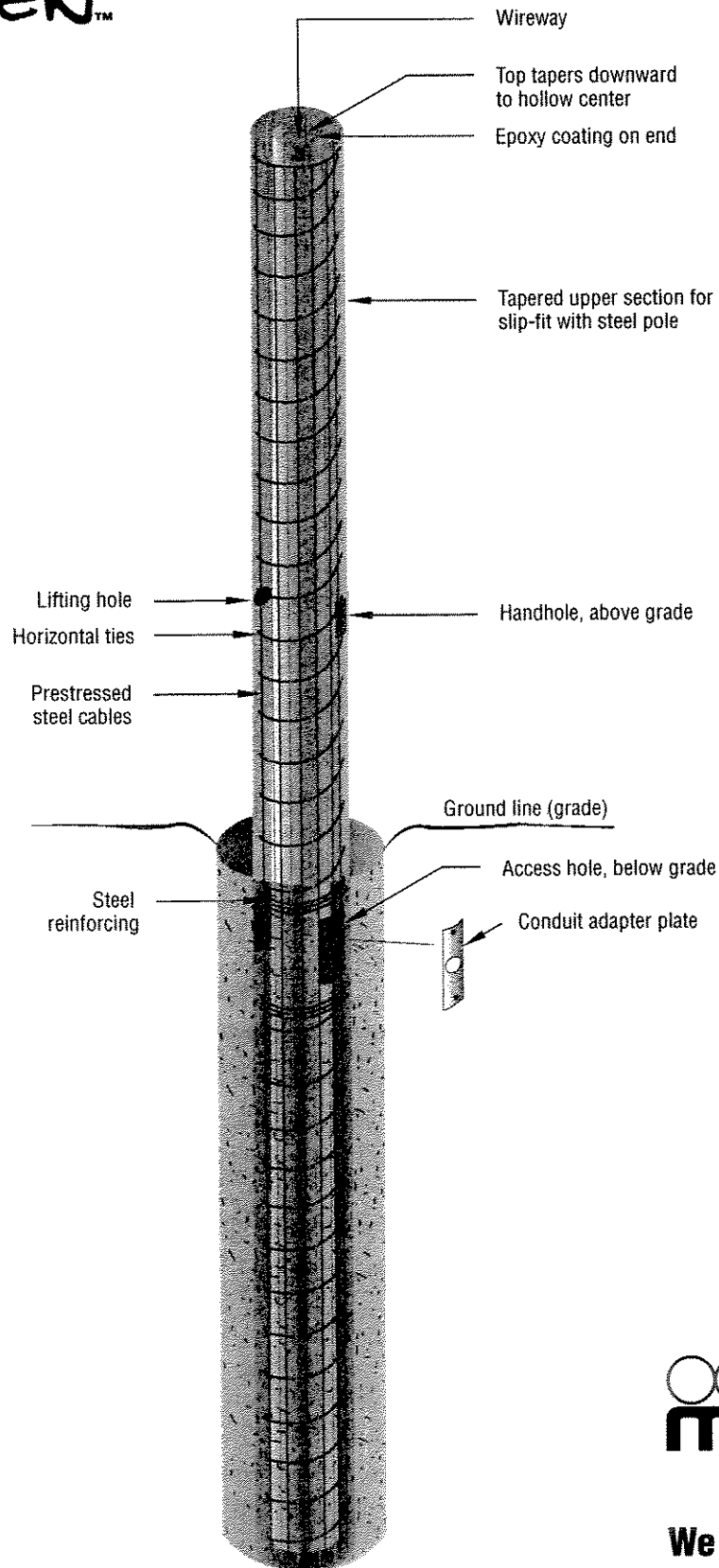
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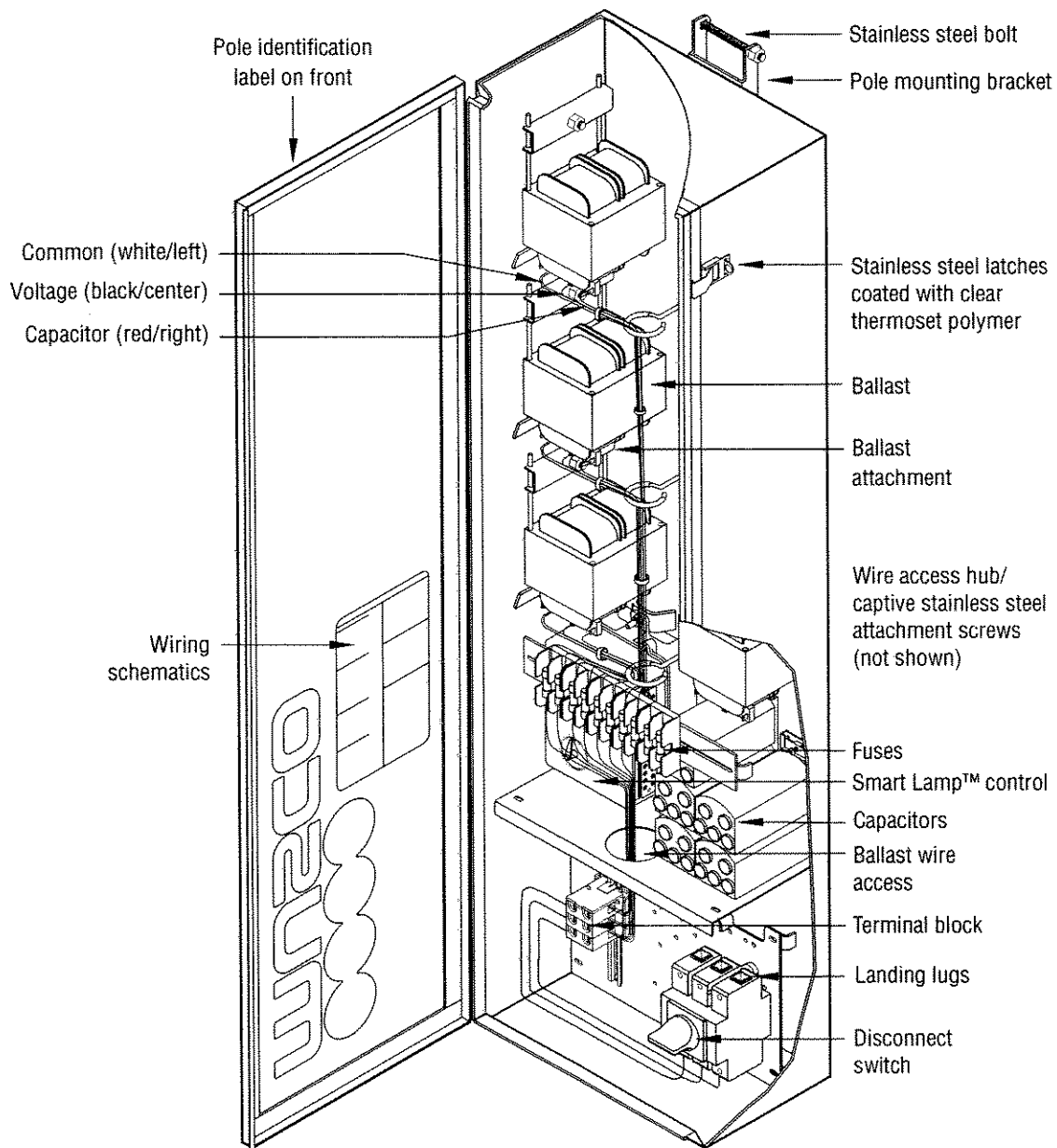
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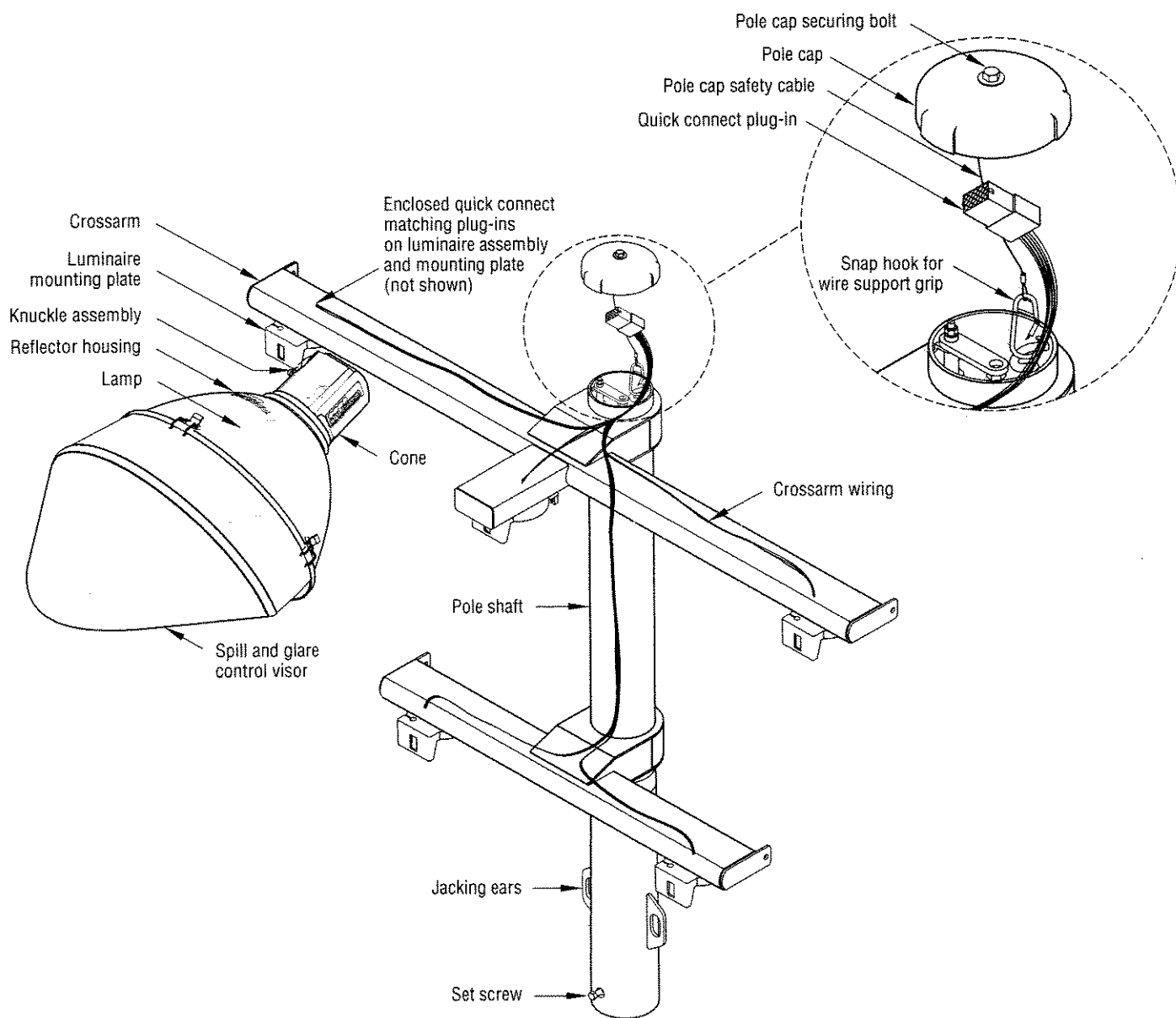
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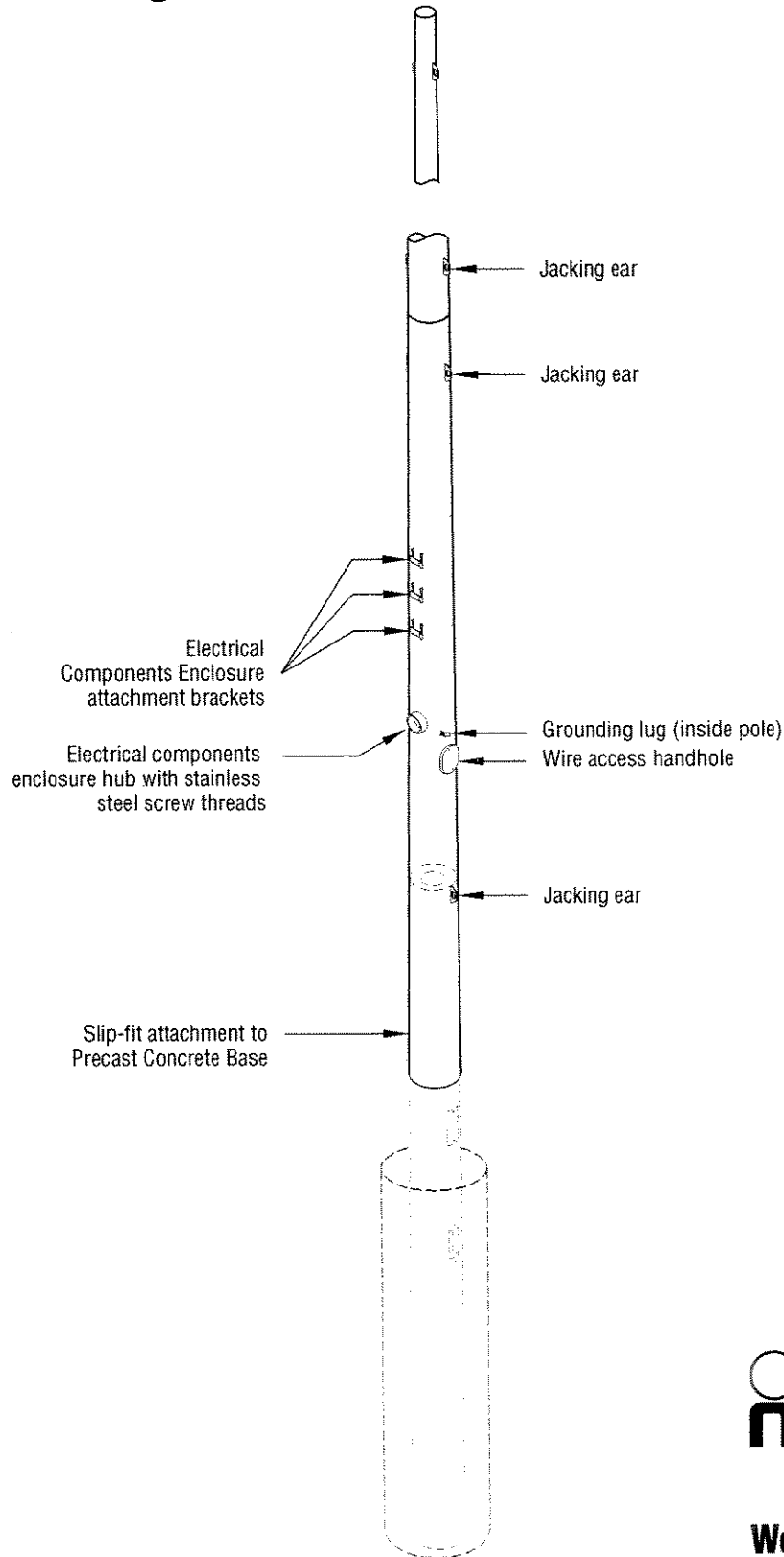
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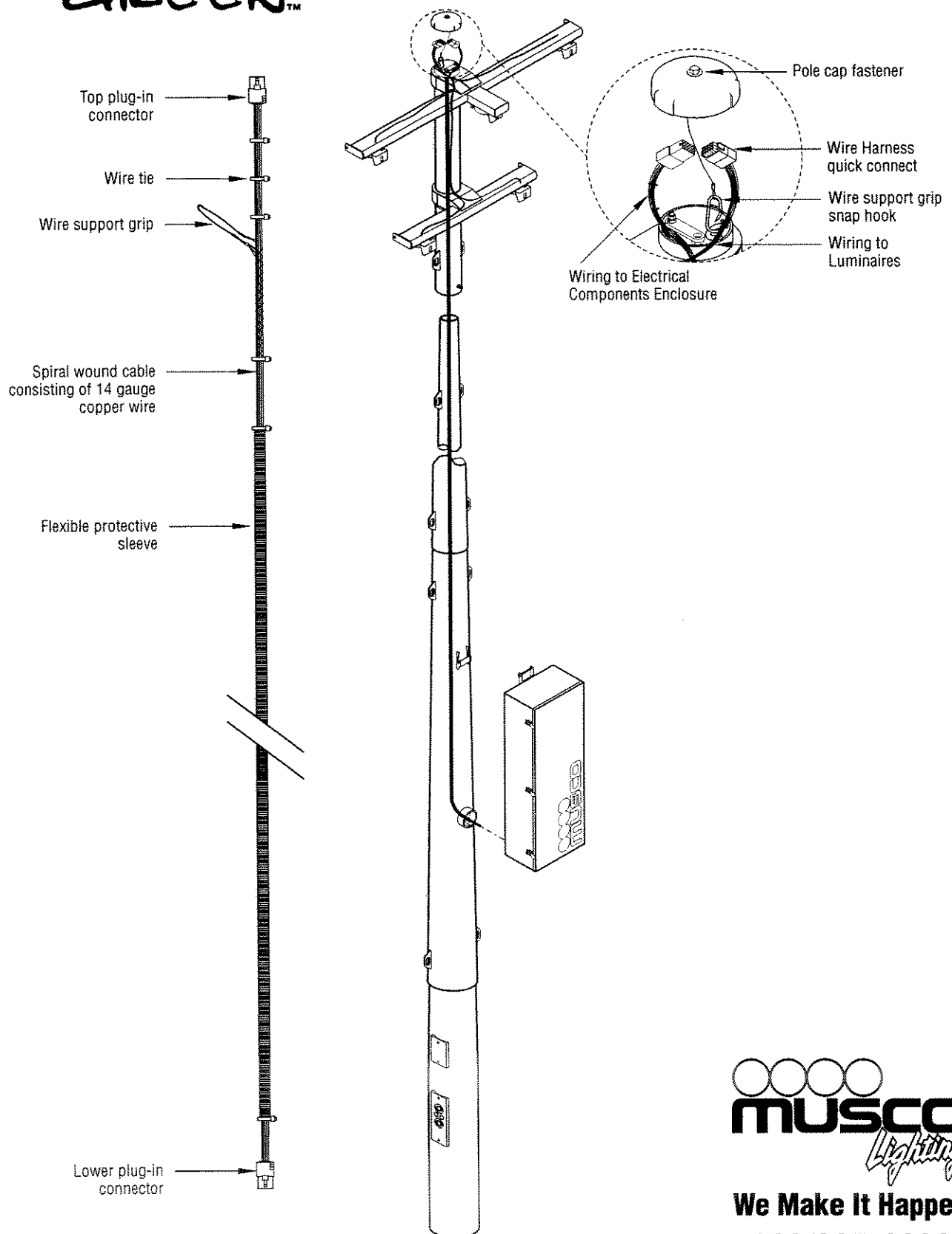
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Corrosion Protection

Manufacturers Certification Of Corrosion Protection

All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion.

All exposed steel shall be hot dip galvanized per ASTM A123. All exposed hardware and fasteners shall be stainless steel of at least 18-8 grade, passivated and polymer coated to prevent possible galvanic corrosion to adjoining metals.

All exposed aluminum shall be powder coated with high performance polyester. All exterior reflective inserts shall be anodized, coated with a clear, high gloss, durable fluorocarbon, and protected from direct environmental exposure to prevent reflective degradation or corrosion.

All wiring shall be enclosed within the crossarms, pole, or electrical components enclosure.

Musco Sports Lighting, LLC

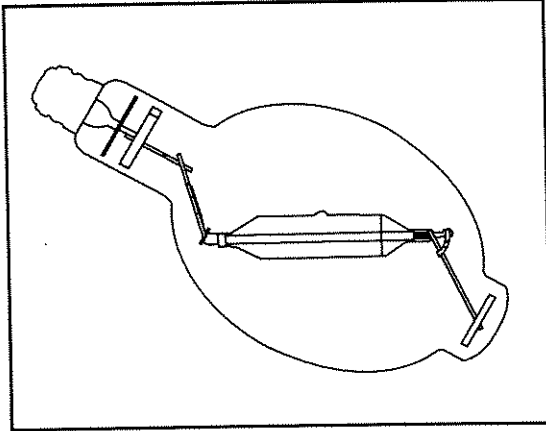
A handwritten signature in black ink that reads "Carol Ebeling".

Carol Ebeling
Manufacturing Engineer

Smart Lamp™ Operating System

1500 Watt Metal Halide Lamp (Clear) Technical Data Sheet

Proprietary to Musco Lighting



Ordering Information

Ordering CodeLA-30Z-1
ANSI DesignationM48
DescriptionMH1500 MZ
Lamp TypeHID: Metal Halide

Physical Characteristics

Bulb SizeBT-56
Bulb FinishClear
BaseMogul Screw Position Oriented
Maximum Overall Length (MOL)15 $\frac{3}{8}$ " (391mm)
Light Center Length (LCL)9 $\frac{1}{8}$ " (232mm)
Arc Tube Lighted Length3 $\frac{5}{16}$ " (84mm)
Arc Tube MaterialFused Silica
Maximum Permissible Bulb Temperature400°C (752°F)
Maximum Permissible Base Temperature210°C (410°F)

Photometric Operating Characteristics¹

System Rated Constant Lumens Over Life ²134,000
Operating PositionArc Tube Horizontal
Lamp Replacement Interval, Hours ³5000
Correlated Color Temperature (Approximate)4200K
CIE Chromaticity Coordinates (Approximate)x-.370, y-.390
Color Rendering Index (R_a)65-70

Electrical Data

Average Lamp Wattage Over Operating Life ²1450
Warm-up Time to 80% of Output3-5 Minutes
Re-strike Time for Hot Lamp10-15 Minutes
Lamp Operating Current (Max. rms Amps) ⁴6.0
Ballast TypeANSI M48
Minimum Starting Temperature-30°C

Footnotes:

- (1) Operating Characteristics are per the Musco Smart Lamp(TM) Operating System on a commercial ballast with arc tube horizontal. Lamp lumen measurements in accordance with IESNA LM-51-00. Lamp color data in accordance with IESNA LM-58-94. Lamp operating cycle of five hours per start to reflect expected field use in the sports lighting industry.
- (2) Lamp starts out at a reduced wattage and increases over life to offset lumen loss as lamp ages. Average wattage over life is 1450 watts.
- (3) Beyond 5,000 hours is the time when constant lumens are no longer maintained by the Smart Lamp™ Operating System. Average lamp life before failure is substantially greater than 5,000 hours as tested and defined per IESNA LM-47-01 with five hours per start.
- (4) Does not include ballast losses.



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SSL01

Recommended Warnings, Cautions and Operating Instructions



WARNING: These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb could cause glass to fly if the envelope is struck.



WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000°C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC TUBE RUPTURE, THE FOLLOWING LAMP OPERATING INSTRUCTIONS MUST BE FOLLOWED.

Hg - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See www.lamprecycle.org or call 1-800-825-6020

Lamp Operating Instructions:

1. Turn off lamps at least once a week for at least 15 minutes in systems which are operating on a continuous basis (24 hours/day-7days/week). **FAILURE TO TURN OFF LAMPS FOR THE MINIMUM RECOMMENDED TIME MAY INCREASE THE POSSIBILITY OF AN INNER ARC-TUBE RUPTURE.**
2. **RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.** Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
3. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
4. Use only auxiliary equipment meeting Philips and/or ANSI standards. Use within voltage limits recommended by ballast manufacturer.
 - A. Operate lamp only within specified limits of operation.
 - B. For total supply load, refer to ballast manufacturers electrical data.
5. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
6. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
7. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
8. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
9. Lamps may require 10 to 20 minutes to re-light if there is a power interruption.
10. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
11. Do not use this lamp in a fixture that contains a Pulse Start metal halide ballast and is specifically designed for use with Pulse Start metal halide lamps.
12. Use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000°C.



Non-Compliance

Musco Complies with all specifications.



Compliance

Design Submittal Data Checklist and Certification

All items listed below are **mandatory**, shall comply with the specification and be provided with the bid.

Included	Item	Description
✓	Letter/ Checklist	As Specified
✓	On Field Lighting Design/Field Layout	As Specified
✓	Off Field Lighting Design	As Specified
✓	Life Cycle Cost calculation	As Specified
✓	Luminaire Aiming Summary	As Specified
✓	Structural Information (if required)	As Specified
✓	Control and Monitoring	As Specified
✓	Electrical distribution plans	As Specified
✓	Performance Guarantee	As Specified
✓	Warranty	As Specified
✓	Project References	As Specified
✓	Product Information	As Specified
✓	Non- Compliance	As Specified
✓	Compliance	As Specified

Manufacturer: Musco Lighting, Inc

Contact Name: Margaret Varela

Signature: _____

Margaret Varela

Phone: 800-756-1205 Date: 06-01-07